THE STRUCTURE AND EFFECTS OF COMPENSATION STRATEGY IN OWNER-CONTROLLED, OWNER-MANAGED, AND MANAGER-CONTROLLED FIRMS

By

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To my parents, Manfred and Gaby Werner, for their love and support.

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Abstract
of Dissertation Presented to the Graduate School
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By

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Recent theoretical and empirical research suggests that organizational environments, characteristics, goals, and strategies affect a firm's compensation strategy. However, compensation strategy research has generally assumed that the compensation system is designed to maximize the return for the owners of the organization. Agency theory and managerial capitalism suggest that the compensation system may be designed to benefit the managers rather than the owners, under conditions of high managerial control. In such a case, the goals of the organization are changed and thus, compensation strategy should be effected. Agency theory and managerial capitalism imply that firms that are manager-controlled (MC) will have different pay levels, pay structures, and pay mixes than firms that are

owner-controlled (OC) or owner-managed (OM). Using data obtained from a large consulting firm, nine hypotheses were tested to determine if differences in compensation strategy exist as predicted by agency theory and managerial capitalism.

As hypothesized, manager-controlled firms were found to have higher managerial pay levels than owner-controlled and owner-managed firms, providing evidence that managers in MC firms are able to maximize their total pay. Additionally, changes in managerial pay were only related to financial performance measures in owner-controlled firms, suggesting that the pay advantage for managers in MC firms is subject to minimal risk. We also found that manager-controlled firms had a greater percentage of managers eligible for long-term incentives, and a greater bonus to total pay ratio, suggesting that the managerial pay advantage in MC firms is largely achieved through bonuses. No relationships between ownership structure and pay structure were found.

Implications for organizations, organizational research, and agency theory and managerial capitalism are discussed.

CHAPTER 1
INTRODUCTION, LITERATURE REVIEW, AND HYPOTHESES

In the early 1980s, the focus of compensation theory and research shifted from an approach that emphasized the techniques of setting compensation to one that addressed how compensation could be used as a strategic element to maximize firm performance (Gomez-Mejia and Welbourne, 1988; Lawler, 1983). Compensation strategy is the use of a firm's compensation system as a control and incentive mechanism to achieve firm objectives. It is important because it affects a firm's performance directly through labor costs and strategic congruence, and indirectly through employee behaviors (Gerhart and Milkovich, 1990; Gomez-Mejia, 1992; Balkin and Gomez-Mejia, 1987; 1990). For example, compensation practices have been shown to affect pay satisfaction, withdrawal cognition, self-reported project performance (Gomez-Mejia and Balkin, 1989), sales volume (Terborg and Ungson, 1985), productivity (Locke, 1982), turnover (Parsons, 1977; Schiemann, 1987), and absenteeism (Jacobson, 1989; Schiemann, 1987).

The strategic approach to compensation has been viewed two ways. First, it has been defined as paying individuals for performing strategic behaviors (Newman, 1988), for

example, reinforcing desired risk-taking behaviors through bonuses or paying bonuses for desired sales growth. Second, compensation strategy has been viewed as an important contributor to an organization's strategic goals by "matching," "fitting," "linking," or "supporting" compensation strategy to an organization's strategy and environment (Balkin and Gomez-Mejia, 1990; Greene and Rowland, 1988; Milkovich, 1988). For example, rewarding employees with stock when pursuing growth strategies that require substantial capital does not actually compensate employees for strategic behaviors, but uses labor capital to facilitate the achievement of desired goals.

Model of Compensation Strategy

Figure 1 is a model of compensation strategy based on the work of Milkovich (1988), Lawler (1989), and Gomez-Mejia and Balkin (1992). It shows that a firm's external environment influences a firm's organizational characteristics which, in turn, affect the goals and strategies of the firm. For example, the external environment may limit the goals and strategies a dominant coalition can develop for accommodation to it. These goals and strategies will affect the compensation strategy, which affects the actual compensation of the firm's employees, which, in turn, influences the firm's performance.

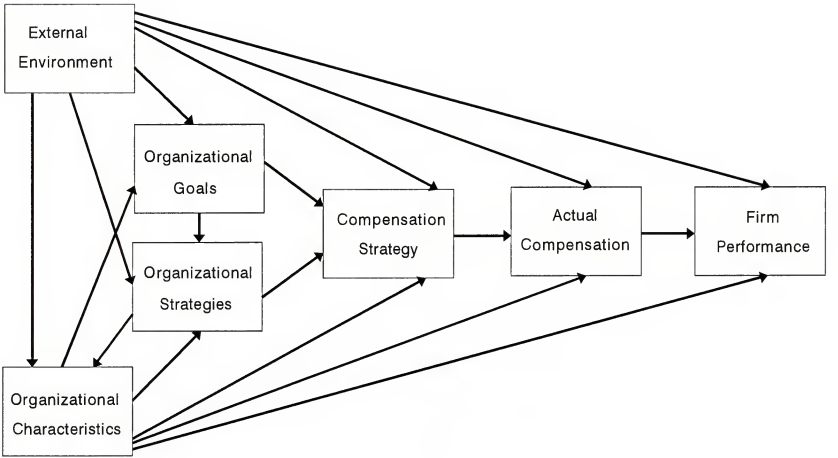

FIGURE 1
MODEL OF COMPENSATION STRATEGY

External Environment

The external environment affects organizational characteristics as well as firm strategies and goals. The external environment includes the technological environment, socio-political environment, competitive environment, economic environment, and share-holder and stake-holder pressures (Greene and Rowland, 1988; Greene, 1987). Thus, legislative changes, labor unions, product market pressures, and labor market pressures are likely to affect organizational, and thus compensation strategies (Milkovich, 1988).

Since the external environment is similar for a particular industry, industry effects are hypothesized to influence organizational goals and strategies, including compensation strategy. For example, legislative changes in health care will affect the strategies and, therefore, the compensation practices of all pharmaceutical companies.

Organizational Characteristics

A firm's organizational characteristics will influence compensation strategies because certain practices might be precluded or very difficult. These characteristics include organization type, the nature of technology, internal labor markets, labor costs/total costs, firm profitability and firm size. For example, if the technology is long-linked and there is serial interdependence, individual incentives

may not be feasible at the lowest levels since it is difficult to attribute output to any one person (Thompson, 1967; Tosi, 1992). Firm size may be related to pay because 1) larger employers hire higher quality workers, or 2) larger employers offer inferior working conditions, or 3) larger employers make greater use of high wages to forestall unionization, or 4) larger employers have more ability to pay high wages, or 5) larger employers face smaller pools of applicants relative to vacancies or 6) larger employers are less able to monitor their workers (Brown and Medoff, 1989).

Goals

The model suggests that the organization's goals will impact compensation strategy directly, and indirectly through its corporate, business, and functional strategies. Goals are viewed as a crucial element in the determination of any strategy (Hofer and Schendel, 1978).

Organizational Strategies

Compensation is affected by organizational strategies such as the rate of new business acquisitions, entrepreneurial orientation, strategic business unit diversity and interdependence, commitment to narrow product line/Market niche, and internally generated growth (Gomez-Mejia and Balkin, 1992). There are differences in pay policies for firms with different business strategies

(Broderick, 1986). For example, Balkin and Gomez-Mejia (1990) showed that single-product firms have low pay levels relative to the market and a strong emphasis on incentives.

Strategic Compensation Decisions

Compensation strategy can be described in terms of decisions which are made about four dimensions of pay: 1) pay level, 2) pay structure, 3) individual differences in pay, and 4) benefits (Gerhart and Milkovich, 1993).

Pay level. In the absence of competitive labor markets, managers make decisions about whether the firm should lead, meet, or lag the current market wage level (Weber and Rynes, 1991; Milkovich and Newman, 1993). Paying above market rates facilitates retention and attraction of employees. Paying below market rates reduces labor costs, but increases absenteeism and turnover.

Pay structure. Pay structure refers to the relationships between pay at the various levels of the organization. The nature of the pay structure may be visualized as a pay curve, which can be represented by plotting the average pay for each organizational level. The pay curve may be described in terms of the height of the pay structure and degree of inequality in the pay structure. Pay structure height refers to 1) the magnitude of the pay differential between pay grades and 2) the number of pay grades between the highest earning and lowest earning

workers. Inequality of pay is related to height, since taller structures create greater differences in the incomes of employees at different levels. Inequality is also related to the slope and degree of change in the pay curve, with greater slopes and greater degrees of change in the pay curve creating greater pay differentials between employees.

Individual differences in pay. Decisions about individual differences in pay are another strategic compensation choice. One key decision is how pay is related to work performance and organizational tenure. Pay for performance entails linking employee rewards to job behaviors or outcomes, making labor costs contingent on productivity and ability to pay (Greene, 1987) and helping to align the goals of owners and employees (Antle and Smith, 1986). It should also reduce turnover, decrease absenteeism, and increase productivity (Katz and Kahn, 1978).

Benefits. Benefits, the indirect financial compensation made available to employees, include all forms of income security, capital accumulation and service programs that firms voluntarily provide to employees. Benefits are most effective for holding members within the organization, but will not lead to greater employee performance than is required to stay in the organization (Katz and Kahn, 1978).

Firm Performance

Not only has it been shown that there are clear effects of compensation on firm performance (e.g., Gomez-Mejia, 1992; Gerhart and Milkovich, 1990; Balkin and Gomez-Mejia, 1990,1987; Leonard, 1990; Abowd, 1990), but also that monetary incentives have greater effects than other motivational strategies such as goal setting, employee participation and job enrichment (Locke, 1982). For example, Terborg and Ungson (1985), in a study of retail store performance, concluded that compensation significantly affected subsequent sales volume. In a review of labor turnover, Parsons (1977) concluded that compensation was a significant predictor of turnover. Jacobson (1989) found a relationship between compensation strategy and absenteeism. Focusing on the benefits portion of the compensation package, Schiemann concluded that "it is clear from the literature that certain pay policies have a positive impact on attendance" (1987, p. 20). Brickley, Bhagat, and Lease (1985) found that announcements of certain proposed changes in managerial compensation packages met with positive market reactions, suggesting that equity holders acknowledge a relationship between firm performance and compensation.

Theoretical Bases of the Model

The rationality assumption pervades much of the work on compensation strategy. This is the assumption that the

compensation strategy of organizations is designed such that managerial decisions are made to achieve goals that are in the owner's interests. When this assumption does not hold, and managers are able to operate in their own interest, the model presented earlier suggests that firm compensation is effected since the organizational goals will change. The basic notion that managerial behavior is self-interested and may lead to non-profit maximizing behaviors is the basis of two theories, agency theory and managerial theory.

Agency Theory

Early concepts of agency theory were developed by Spence and Zeckhauser (1971) and Ross (1973). Agency theory views a firm as a "legal entity that serves as a nexus for a complex set of contracts (written and unwritten) among disparate individuals" (Jensen, 1983, p. 326). The agency relationship is defined as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (Jensen and Meckling, 1976, p. 308).

The principal-agent relationship. A principal (the owner) contracts with an agent (the manager) to operate the business, but problems arise when there is a divergence of interests causing agents to make self-utility maximizing decisions rather than decisions that maximize the utility of

the principal. Typically, agency theory views the shareholders or the board of directors as the principals, and top managers as the agents.

There are several assumptions regarding the principal-agent relationship in agency theory (Hunt and Hogler, 1990; Baiman, 1990). These assumptions include the following:

1) Individuals are assumed to be rational and self-utility maximizing with unlimited computation ability. Without rational self-utility maximizing agents, principals could easily establish convergence between their goals and those of the agents.

2) The agent has private information that the principal cannot learn without costs, creating information asymmetry. If perfect information were costlessly available, there would be no agency problem since principals could simply monitor their agents (McGuire, 1988).

3) The agent is work and risk averse. Were agents not work-averse, principals could just specify in the contract what agents need to do and assume that the agents will do it. If agents were not risk-averse, principals could just shift the complete risk to the agents making payment 100% dependent on the outcome.

Agency costs. Agency costs include any costs incurred to assure that the agent executes decisions that are in the best interest of the principal. Agency costs are the monitoring expenditures by the principal, the bonding expenditures by the agent and the residual loss (Jensen and Meckling, 1976). Monitoring costs include costs arising from the need to institute incentive schemes, monitoring procedures, supervision, added supervisory levels to the organization, information systems, budgeting systems, reporting procedures and boards of directors (Eisenhardt,

1989; McGuire, 1988). Bonding expenditures are costs implicit in sub-optimal risk-sharing. Residual losses are the costs arising from unresolved agency problems.

The agency costs arise because of the divergent goals of agents and principals, and the tendency of agents to pursue their self-interests. This tendency toward self-interested rather than cooperative behavior may lead to moral hazard or adverse selection (Baiman, 1982).

Moral hazard refers to lack of effort on the part of the agent. Moral hazard can arise as a result of basing contracts on imperfect surrogates of behavior (Baiman, 1982), such as departmental output. Moral hazard can be overcome through an information system that eliminates information asymmetry or with monitoring and contracts that appeal to an agent's self-seeking nature (Jensen and Meckling, 1976; Baiman, 1982; Simon, 1991).

Adverse selection refers to the misrepresentation of ability by the agent. Adverse selection can arise if agents are motivated to misrepresent their private information to achieve their self-seeking goals. Information that will reveal the agents' private information will solve the problem of adverse selection. Adverse selection may also be overcome through risk-sharing which minimizes returns for agents who misrepresent themselves.

Principals minimize agency costs by balancing the cost of monitoring, the cost of risk-shifting, and the cost of

unresolved agency problems (Jensen and Meckling, 1976). Monitoring will solve both adverse selection and moral hazard, but may be costly. If outcomes are measurable, agents' goals can be aligned with principals' goals by making pay contingent on outcomes, but this transfers undesired risk to the agent since the agent's behaviors are not the only factor that determines the outcome. If risk-sharing were optimal, monitoring would be unnecessary since the contract is self-enforcing through agent and principal goal alignment (McGuire, 1988; Singh, 1985).

Risk and risk-sharing. The general assumption is that owners as principals are risk neutral because, as stockholders, they can diversify risk through a portfolio of investments, while agents (managers) are risk averse because they have no such option of diversification, other than within the firm. This complicates the agency problem and principal-agent risk-sharing.

A number of authors have mathematically modelled risk-sharing and its consequences. Androkovich (1990) showed that risk-sharing attributes and inherent incentive effects of a payment scheme are very closely inter-linked. Shavell (1979) showed that if the agent is risk averse, compensation would always depend to some extent on the outcome, but never leave the agent bearing all the risk. Also, the fee would always depend to some extent on information which the principal has about the agent's effort. Basu, Lal,

Srinivasan, and Staelin (1985) showed that the weaker the link between an agent's effort and outcome, the less the principal should share risk with the agent. Thus, the greater the variance in the outcome caused by exogenous factors, the less risk-sharing is desired since risk averse agents will require excessive compensation.

Empirical evidence is consistent with the assumption that managers are risk averse. In studying mergers, Hand, Lloyd, and Modani concluded that mergers occurred to "enable managers to diversify the risk of their employment income" (1983, p.9). Amihud and Lev found greater diversification and more conglomerate acquisitions in firms where managers (agents) were relatively less controlled by owners. They concluded that risk reduction through conglomerate mergers as a merger motive was "plausible for managers who are striving to decrease their 'employment risk'. The empirical findings... are consistent with this managerial motive" (1979, p. 615).

Managerial risk aversion is costly because premiums are required to get managers to accept risk. An experiment by Conlon and Parks (1990) showed that agents required risk premiums in return for accepting contingent pay. Eisenhardt (1988) found that greater outcome uncertainty was significantly and negatively related to risk-sharing.

Lack of risk-sharing may increase residual losses. Agents' rewards not based on outcomes could lead to self-

utility maximization and moral hazard. Agents not bearing the cost of their decisions may expend less energy or vigilance for the firm. This may also lead to a free-rider problem where lack of effort incurs no penalties by the agent (McGuire, 1988).

In organizations, risk-sharing is achieved with compensation incentives. Owners (principals) can devise compensation strategies to minimize the agency problem, specifically through pay for performance. Straight base salary is risk free, but any compensation tied to variable performance measures entails greater risk for agents and reduces risk for principals. Complete risk-shifting could occur if agents were not risk averse, since 100% of the agent's compensation could be tied to outcomes, completely aligning principal and agent goals and essentially eliminating the agency problem.

Monitoring. Another way for principals to minimize the agency problem is through monitoring. Monitoring has been defined as the direct or indirect observation of the agent's action or behavior over some period of time (Jensen and Meckling, 1976). Monitoring is always beneficial to the principal unless the agent's actions can only have a positive affect on the principal (Holmstrom, 1979; Shavell, 1979). Generally, monitoring involves gathering information on three factors: 1) the agent's effort, 2) random external variables which may effect the success of the agent's

efforts, and 3) the outcome (McGuire, 1988). If information about all three is available, no agency problem exists since a contract can be specified based on the appropriateness of the agent's actions. Without knowledge of the agent's actions, principals are exposed to moral hazard or adverse selection. Without knowledge of the random external variables which may affect the success of the agent's efforts, principals can not judge the appropriateness of the agent's efforts, and may be rewarding (or punishing) the agent for circumstances beyond the control of the agent. Without knowledge of the outcome, the principal cannot evaluate the relationship between the agent's actions and other external factors affecting the outcome.

Empirical studies have supported the theoretical assertions about the role of monitoring. Anderson (1985) found that the greater the difficulty of evaluating a salesperson's performance (outcome), the more likely the firm was to substitute monitoring for commission. Similarly, Eisenhardt (1988) found that the more programmable (monitorable) jobs were, the less likely sales people would be paid in risk-sharing commissions. She also found that as monitoring increased (as measured by span of control), the use of risk-sharing commissions decreased and that the use of monitoring was a better predictor of low risk-sharing when monitoring was easier (jobs were programmable) than when monitoring was more difficult.

Conlon and Parks (1990) found that when devising a new pay agreement, performance contingent compensation (risk-sharing) was more likely when principals could not monitor an agent's efforts. This emphasizes the fact that not only must financial returns be considered when balancing the three different agency costs, but also whether or not monitoring or risk-shifting is even possible.

Monitoring and organizational hierarchy. Fama and Jensen (1983) contend that agency problems are controlled by relatively cheap monitoring achieved through decision hierarchies, mutual monitoring and boards of directors. In decision hierarchies, higher level agents ratify and monitor the decisions, initiative, and performance of lower level agents. Mutual monitoring systems occur when agents interact to produce outputs and acquire low-cost information about their colleagues. Therefore, in the organization, supervisors (themselves agents) act as monitors who screen individuals, monitor inputs, and obtain information about the state of the world (Fama and Jensen, 1983; Stiglitz, 1975). They are agents acting as principals, monitoring other agents further down the organizational hierarchy.

However, as monitoring cascades through hierarchical levels, it becomes cumulatively less effective. This is called "control loss" (Williamson, 1967). The amount of the control loss is dependent upon the nature of the supervision, for example, it is greater if employees are

aware of the times at which the are being monitored (Calvo and Wellisz, 1978).

Control loss occurs within "a web of distortions aimed at dealing simultaneously with the main incentive difficulties present in the organization" (Demski and Sappington, 1987,p. 381). There are a number of problems when the principal isn't a principal, which are discussed by Baker, Jensen, and Murphy (1988). First, unless the agent-monitors are themselves monitored or there is risk-sharing, they will have little reason to enforce value-maximizing contracts with subordinates. Second, monitoring may be unreliable since agents must bear all of the monitoring costs but receive little benefit from more accurate monitoring. Costs borne by monitoring agents include not only the effort needed to monitor, but also the cost associated with giving low evaluations of or dismissals to unproductive workers. These costs include personal discomfort with the task, chastisement by other employees and peers, the loss of friendships, and the possibility of retaliation. Third, this lack of effort to monitor may go all the way to the board of directors, who also bear a disproportionately large share of the nonpecuniary costs, while receiving little of the pecuniary benefits.

All this suggests that although a strong agency relationship at the top of the organization may become diluted by the time it reaches the bottom, a weak agency

relationship at the top of the organization will never gain strength in successively lower organizational levels.

Compensation as monitoring. Compensation can be designed in ways to share risk and monitor agents. Risk-sharing is accomplished through incentive alignment; i.e. rewarding agents for measurable results that are determined to be in the best interest of the owner. Moral hazard and adverse selection also can be resolved through incentive alignment. Compensation can be used to overcome moral hazard and adverse selection by basing a portion of an agent's reward on the outcome or on the behaviors of the agent. Self-utility maximizing agents have no incentive to create moral hazard or adverse selection problems if doing so inhibits the achievement of their desired rewards.

Managerialism

Like agency theory, managerial capitalism also posits that managers will maximize their self-interests at the expense of owners. The managerialist argument is that there is no "justification for assuming that those in control of a modern corporation will also choose to operate it in the interest of the owners" (Berle and Means, 1932, p.121). When managers in control desire personal monetary gain, power enhancement, labor standards above those required by competitive conditions, job security or labor-leisure

trade-offs, their goals will diverge from the profitability goals of owners (Berle and Means, 1932; McEachern, 1975).

The dominant theme of managerialism is that organizational growth is the goal of controlling managers. Growth serves several functions for managers. First, salaries appear to be far more closely correlated with firm size than firm profit in manager-controlled firms, reducing income risk for managers (Baumol, 1967). Second, firm growth leads to increased power, salary, and status for managers (Marris, 1964). Lastly, growth helps ensure survival, since larger firms are more insulated against environmental threats, providing increased job security for managers (Galbraith, 1967). However, managers must maintain a satisfactory level of profits to obtain capital to further increase sales and protect against unwanted acquisitions (Marris, 1964; Baumol,1967).

The core of the managerialist argument is that managers control the firm because of the dispersion of stock ownership. Many of the possible constraints on managers are eliminated when ownership is so widely dispersed that the gain to any individual stockholder (through an increase in share value) is greatly offset by the cost of that action (Hindley, 1970). The wide stock dispersion creates a free-rider problem for equity holders, where individual action is too costly, and cooperative action will not depend on one stock-holder. This allows managers the autonomy to pursue

maximization of their own utility through growth, rather than the owners' desired profit-maximization.

Types of ownership. The control of a firm "lies in the hand of the individual or group who have the actual power to select the board of directors, (or its majority), either by mobilizing the legal right to choose them - 'controlling' a majority of the votes directly or through some legal device--or by exerting pressure which influence their choice" (Berle and Means, 1932, p. 69). This has led to a classification of the ownership structure in which firms are designated as owner-controlled (OC), manager-controlled (MC), or owner-managed (OM), depending on who is deemed to actually control the organization.

This raises the critical issue of how to assess control. The conventional approach is to differentiate between manager-controlled and owner-controlled firms by using a percentage cut-off for the largest single non-management share-holder (Hunt, 1986). The current dominant practice is that firms are classified as owner-controlled when there is a single non-management equity holder with at least a 5% stock holding. Firms that are not designated as owner-controlled are manager-controlled unless a member of management holds more than 5% of the outstanding equity. Firms are classified as owner-managed when a member of management is a equity holder of 5% or more of the outstanding stock.

Support for managerialism. Numerous studies from a wide range of academic disciplines such as accounting (e.g. Hunt, 1985), economics (e.g. McEachern, 1975), management (e.g. Tosi and Gomez-Mejia, 1989), and sociology (e.g. Allen, 1981) have shown self-serving managerial behaviors. For example, Grabowski and Mueller (1972) pitted a managerialism model against a pure stockholder welfare maximization model in dividend and investment decisions. They concluded that the managerial model was conceptually and statistically superior. In a study of merger decisions, Lewellen, Loderer, and Rosenfeld (1985) found that senior managers with large personal stockholdings in their firms were less likely to engage in acquisitions that reduce shareholder wealth than were managers with small stockholdings. In a study examining the relationship between managerial welfare and tender offer resistance, Walkling and Long found the existence or absence of bid resistance to be directly related to the personal wealth changes of the target firm's managers. They concluded that the results "provide direct support for the managerial welfare hypothesis" (1984, p. 67).

Other support for the managerial hypothesis includes evidence that managers 1) make investment decisions which are less optimal for owners, but minimize the manager's downside risk; 2) engage in acquisitions and mergers which transfer higher agency costs to owners but are beneficial

for managers; 3) block organizational mechanisms intended to check managerial performance; and 4) use organization resources to protect themselves from market control (see Tosi and Gomez-Mejia, 1993).

The most logical test for managerialism is a comparison of MC and OC firm performance, but results of a large body of research on this issue are mixed (Hunt, 1986). Several studies have found no support for the managerialism view of the relationship between control and performance. Kamerschen (1968) found, counter to the managerialism prediction, a significant and positive association between profit rates and a change from non-management to management control. Ware (1975) found no significant difference in rate of return in OC and MC firms in the food and beverage industry. Holl (1975) found no significant differences in profit or growth in OC and MC firms. Madden (1982) showed that stock market performance was independent of the relative separation of ownership from control over the 1964-1973 period. Elliott (1972) did find a significant difference in growth of cash flow between OC and MC firms, which suggested a higher propensity by manager-controlled firms toward liquidity, and possibly toward aversion of financial risk. He did not, however, find any differences between OC and MC firms in stock of liquid assets, debt/equity ratio, non-equity financed assets, change in sales, change in total assets, dividends, capital

appreciation, total owner earnings, profits, discretionary income, return on equity, growth in spending or proportion of assets. Radice (1971) did find significantly higher profit rates in OC firms, but, contrary to what the managerialism model would predict, he also found that OC firms had significantly higher growth rates.

There is equally strong evidence supporting the hypothesized relationship between control and firm performance. Shelton, in a study of franchised and non-franchised restaurants, concluded that "despite detailed supervision which would seem to minimize opportunities for managerial initiative, restaurants operated by independent franchisee-owners outperformed those supervised by company managers, even though the company managers are paid on a basis that involves some incentive compensation for achieving profits" (1967, p. 1258). After finding owner-controlled firms outperformed management controlled firms by a considerable margin, Monsen, Chiu, and Cooley concluded "that control type affects all industries tested very strongly" (1968, p. 442). Boudreaux (1973) also found that owner-controlled firms had significantly higher returns. Additionally he found that owner-controlled firms also had more variable returns, consistent with the managerial premise that managers are assumed to be more risk averse than owners. Palmer (1973) found that management controlled firms reported significantly lower profit rates than owner-

controlled firms, but only when there was a high degree of monopoly power. He suggested that lack of market controls in these situations exacerbated the managerial problem. McEachern (1975,1976) found that OC and OM firms both yielded significantly higher rates of return on stockholder's investment than MC firms. Stano also concluded that "shareholders of owner-controlled firms have been provided with a significantly higher rate of return than shareholders of management-controlled firms" (1976, p. 672). More recently, Krause in a study of 345 Fortune 500 firms, concluded that "statistically significant difference in the stock market performance . . . were found to be related systematically to the degree of control of the firm by the largest shareholder" (1988, p. 37). Interestingly, significant performance differences between MC and OC firms were found in market measures, but accounting measures produced conflicting and inconclusive results.

There are a number of explanations for these inconsistent findings. One is that there are no actual differences in manager-controlled and owner-controlled firms, and when differences are found in studies, they are due to sampling error. This seems unlikely though, given that there is a substantial body of evidence showing performance differences. One possible reason why differences may not appear in some of the studies is that the nature of accounting methods used in OC and MC firms may

lead to an understatement of the reported differences between them (Salamon and Smith, 1979; Hunt, 1985; Krause, 1988). There is evidence that MC firms overstate earnings, attempting "to control the information in annual accounting reports in a manner which causes firm performance to be misrepresented" (Salamon and Smith, 1979, p. 327). Another possible reason for these inconsistent findings is that ownership distribution is used as a distant inferential proxy for actual monitoring. When controlling for differences in actual monitoring (measured by a behavioral scale), ownership distribution by itself shows little difference in firm performance (Tosi and Gomez-Mejia, 1993).

Compensation Implications of Agency Theory and Managerialism

Both agency theory and managerialism have been used as a basis for studying compensation strategy issues with a primary focus in the area of CEO pay. In this research these theories will be used to address issues of compensation strategy at lower levels of the firm.

Pay Level, Agency Theory and Managerialism

The underlying motivational proposition of the managerialist perspective is that when managers control the firm, there is an incentive to increase firm size. Thus, the managerialists contend that CEOs who are left unchecked will focus their efforts on increasing firm size, to

maximize their earnings, while increasing the residual loss to owners resulting from excessive executive pay. In fact, across seventeen studies of CEO pay, size accounted for over 26% of the variance in CEO pay, while performance accounted for less than 6% (Tosi, Werner, Katz, and Gomez-Mejia, 1993). In further support of the managerial perspective it has been shown that executives in manager-controlled firms receive higher pay than executives in owner-controlled firms (e.g. Gomez-Mejia, Tosi, and Hinkin, 1987; Dyl, 1988; Allen, 1981; Santerre and Neun, 1989).

There are several explanations for why size is related to CEO pay. First, larger size leads to more levels in the organizational hierarchy. Since pay differentials need to occur between levels to maintain internal equity, more levels lead to higher pay at the top (Simon, 1957; Mahoney, 1979). Second, the economic theories of marginal revenue product and human capital both predict greater pay in firms of greater size. It is suggested that the marginal productivity of the CEO varies directly with size since an effective CEO can create greater profits for large firms than for small ones. Human capital theory (Becker, 1964) suggests that greater training, education, and experience contributes to wages. Since the top position in large firms is more complex, difficult and carries more responsibility than in small firms, greater human capital is required. Third, sociologists contend that pay is related to one's

power (Allen, 1981). Leaders of large organizations can be assumed to have generally greater power than those of small organizations.

Pay level decisions may be used to achieve owners' goals or managers' goals. When owners exert substantial influence over the firm, the organizational culture and climate, strategic orientation, policies and practices governing various employee groups, as well as the overall structure of the reward system, strongly reinforces a performance ethos (Tosi and Gomez-Mejia, 1993). Because compensation strategy decisions in MC firms are made by managers who may not be maximizing for owners, we would expect the compensation strategy to be more focussed on the benefits of the managers. In owner-controlled firms we would expect the compensation strategy to be more focussed on the benefits of the owners. These decisions will affect pay levels throughout the firm.

Pay Structure, Agency Theory and Managerialism

The pay structure, which affects the pay of all employees in the firm, can also be used to achieve the goals of managers or owners. Most empirical work, however, has not focussed on the relationship between organizational pay structure and ownership structure, but on the pay structure of top executives. Still, it is expected that owners in owner-controlled firms design the pay structure such that it

helps achieve their objectives. Similarly, managers design the structure height and degree of pay inequality in manager-controlled firms to maximize their self-interested goals.

Differences in Pay, Agency Theory and Managerialism

The agency notions of risk-sharing and compensation as monitoring have been used to explain individual differences in pay. Owners can align their goals with the goals of the CEO through pay for performance, but managers are risk averse, causing them to minimize their amount of risk-sharing in a manager-controlled firm. However, in an owner-controlled firm, owners try to reduce the agency problem and residual loss by either monitoring or risk-shifting. Because of the considerable difficulty of behaviorally monitoring an unprogrammable job such as CEO, agency theory predicts considerable risk-shifting. Thus, both agency theory and managerialism predict a greater component of incentives in the compensation of owner-controlled CEOs.

A number of studies have empirically tested this issue. The incentive structure of managers in owner-controlled firms appears to be designed to maximize profits and market value to a greater extent than the incentive structure in manager-controlled firms. Managers in owner-controlled firms are paid more for profits and market value and less for sales (McEachern, 1975). Bonuses, salary and long-term

incentives of owner-controlled and manager-controlled CEOs are such that:

> 1) Manager-controlled firms design compensation systems to avoid the riskiness of fluctuating performance and take advantage of a more stable factor, size.
>
> 2) CEOs in MC firms have greater long-term incomes when performance is good, while the scale of their organizations provides a downside hedge against poor performance. Thus, CEOs of manager-controlled firms have the best of both worlds, since the managers earn large bonuses when performance is good, but do not suffer when performance is poor.
>
> 3) CEOs in OC firms are in riskier positions since they are primarily rewarded for performance, a more variable and risky factor, in all components of compensation (Gomez-Mejia, Tosi, and Hinkin, 1987).

This occurs because of the structure of monitoring and risk-sharing in the two types of firms: owner-controlled firms have greater compensation monitoring than manager-controlled firms; managers in owner-controlled firms bear more compensation risk than managers in manager-controlled firms; CEOs in manager-controlled firms are the most influential in compensation decisions while in owner-controlled firms the boards of directors and major stockholders are the most influential (Tosi and Gomez-Mejia, 1989). In manager-controlled firms, the CEOs' compensation always increases with the completion of a major acquisition; however, in owner-controlled firms the CEO is rewarded only when acquisitions are profitable (Kroll, Simmons, and Wright, 1990).

Baker, Jensen, and Murphy (1988) suggest that monitoring and risk-sharing (or the lack thereof) should "cascade" down the organization. If principals essentially eliminate residual loss through monitoring or risk-sharing costs, they are doing so by aligning the goals of the agent with the principal. Thus the agent's actions, efforts, and behaviors are similar to those of the principal, essentially transforming the agent (the CEO) into a pseudo-principal. In an organizational context, these CEOs (pseudo-principals) have their own agency problems with their subordinates (agents) which could be solved with similar approaches, i.e., monitoring and risk-sharing. Thus, we would expect to see a relationship between monitoring and incentive alignment at the top of the firm and the second level, between the second level and the third level, and so forth.

Hypotheses

This research will examine some of the relationships of the compensation model that are affected by the assumptions of managerialism and agency theory. The hypotheses specify relationships between ownership structure of the firm and pay level, pay structure, and individual differences in pay.

Pay Level Differences Between OC, OM and MC Firms

There is evidence that residual losses to the principals through excessive managerial compensation are

greater in MC firms, where executives have higher pay than executives in OC firms (Dyl, 1988; Santerre and Neun, 1989; Allen, 1990). This relationship should also hold at lower organizational levels, i.e., MC firms have higher pay levels than OC firms, for two reasons. First, paying above market wage may make the upper level manager's job easier since such a strategy increases employee attraction and retention. Second, since pay differences between levels are relatively stable (Simon, 1957; Mahoney, 1979), providing higher pay for subordinates will have the effect of elevating top level managers' own pay. Thus:

HYPOTHESIS 1a

Manager-controlled organizations have higher pay levels than owner-controlled organizations.

Given that managers hold a significant share of ownership in owner-managed firms, there should be no principal-agent problem. Thus, owner-managed firms should behave similar to owner-controlled firms (McEachern, 1975). Therefore, the same logic as above, which suggests that manager-controlled firms will have higher pay levels than OC firms is applicable to OM firms. Thus:

HYPOTHESIS 1b

Manager-controlled organizations have higher pay levels than owner-managed organizations.

Pay Structure Differences Between OC, OM and MC Firms

Since pay differences between levels are relatively stable (Simon, 1957; Mahoney, 1979), executive pay will be higher in firms with taller organizational structures. Furthermore, the number of levels is also related to organization complexity, another factor often cited as a justification for higher executive pay. Finally, managerial pay levels will be affected by the percent pay difference between organization levels. Given the argument that managers of MC firms are expected to act in their own interests, we would expect greater pay differentials between organization levels, more organization levels, and greater pay inequality between levels in MC firms even when controlling for size. Thus:

HYPOTHESIS 2a
Manager-controlled organizations have taller pay structures than owner-controlled organizations.

HYPOTHESIS 2b
Manager-controlled organizations have taller pay structures than owner-managed organizations.

HYPOTHESIS 3a
Manager-controlled organizations have greater income inequality than owner-controlled organizations.

HYPOTHESIS 3b
Manager-controlled organizations have greater income inequality than owner-managed organizations.

Firms with flatter pay structures and greater equality in pay are considered to have more egalitarian pay (Gerhart and Milkovich, 1993). Egalitarian pay has received

considerable attention lately because of its congruency with the current popular trend of flattening organizational structures and the increasing pay differential between the lower and upper level employees in U.S. organizations (Cowherd and Levine, 1992). The level of egalitarianism in the pay structure may be positively related to employee satisfaction, work team unity and workers' performance (Milkovich and Newman, 1993). For example, Cowherd and Levine (1992) have shown that greater pay inequity between top managers and lower level employees is related to lower product quality. Thus:

HYPOTHESIS 4

Organizations with greater income equality will perform better than those with greater income inequality.

Individual Differences in Pay Between MC and OC Firms

There is consistent evidence that CEO pay in OC firms is more closely related to performance than in MC firms, while pay in MC firms is more closely related to firm size (Gomez-Mejia, Tosi, and Hinkin, 1987; Hunt, 1986; McEachern, 1975). Since risk-sharing should "cascade" in a firm, firms with strong links between pay and performance for top managers will have a strong pay/performance relationship at lower levels. Furthermore the overall total pay (salary plus bonus) of OC and OM firms will be more strongly related to performance. Thus:

HYPOTHESIS 5a

The managerial pay of owner-controlled organizations is more strongly correlated with performance than the managerial pay of manager-controlled organizations.

HYPOTHESIS 5b

The managerial pay of owner-managed organizations is more strongly correlated with performance than the managerial pay of manager-controlled organizations.

HYPOTHESIS 6a

The percentage of employees eligible for bonuses will be greater in owner-controlled organizations than in manager-controlled organizations.

HYPOTHESIS 6b

The percentage of employees eligible for bonuses will be greater in owner-managed organizations than in manager-controlled organizations.

Another important compensation strategy decision is how to relate pay to short-term and long-term goals. Short-term incentive plans typically cover a year or less (Ellig, 1984). Better performing organizations have long-term compensation plans linked to performance, while poorer performers have more restricted stock plans focusing on retention (Wiegman, 1988). "This appears to reinforce the critic's point that low performing companies seem more interested in the well-being of their executive than in providing realistic incentives to increase shareholder value" (Wiegman, 1988, p. 101).

Short-term incentives do not shift as much risk as long-term incentives, since long-term goals may be less clear and more uncertain (Gomez-Mejia and Welbourne, 1988). Short-term incentives typically cover a year or less and are

usually tied too measurable factors such as return on investment, percent growth in market share, change in stock price, return on equity, profit before tax, and profit after tax (Aggarwal and Aggarwal, 1986; Tharp, 1985).

According to managerial theory, pay in management controlled firms is more short-term oriented. Risk averse managers should prefer to avoid long-term incentives since they are far more uncertain and risky. Thus we would expect fewer managers to have long-term incentives as part of the compensation structure in MC firms. Thus:

HYPOTHESIS 7a
Owner-controlled organizations will use a greater percentage of long-term performance incentives than in manager-controlled organizations.

HYPOTHESIS 7b
Owner-managed organizations will use a greater percentage of long-term performance incentives than in manager-controlled organizations.

Another compensation strategy decision is the choice of what proportion of total pay should be placed at risk through the use of incentives. Incentives are related to increased organizational performance (Terborg and Ungson, 1985), individual performance (Asch, 1990), shareholder return (Abowd, 1990), productivity (Frisch and Dickinson, 1990), and lower quit rates (Lakhani, 1988) and absenteeism (Jacobson, 1989). Higher percentages of variable managerial pay have been shown to positively affect subsequent firm financial performance (Gerhart and Milkovich, 1990). Allowing greater downside risk has been shown to aid in

aligning the managers' interest with those of the owners (Starks, 1987). Thus:

HYPOTHESIS 8a

Managerial pay in owner-controlled organizations has a greater percentage of bonus pay than managerial pay in manager-controlled organizations.

HYPOTHESIS 8b

Managerial pay in owner-managed organizations has a greater percentage of bonus pay than managerial pay in manager-controlled organizations.

There are different ways to design incentive systems. Incentives may be linked to individual goals, or to corporate goals such as earnings per share, growth, market share and strategic positioning (Meng, 1990). Theoretically, MC firms will strive for growth while OC and OM firms strive for financial performance goals that maximize shareholder wealth (Berle and Means, 1932), leading to the hypothesis that organizational level incentives will have a stronger relationship to financial performance measures in OC firms than in MC firms. Shareholders desire both improvements in profit performance, as well as satisfactory levels of financial performance. Thus:

HYPOTHESIS 9a

Changes in managerial pay will be related to changes in financial performance and absolute financial performance level in owner-controlled firms, but not in manager-controlled firms.

HYPOTHESIS 9b

Changes in managerial pay will be related to changes in financial performance and absolute financial performance level in owner-managed firms, but not in manager-controlled firms.

Summary

This chapter has outlined the basic theories of agency and managerialism and shown how they relate to compensation strategy in an organization. A number of hypothesis have been formulated using agency theory and managerialism. Table 1-1 summarizes the hypotheses. The next chapter describes the methods used to test the hypotheses. It includes descriptions of the sample, measures and models used.

TABLE 1-1
HYPOTHESIZED COMPENSATION STRATEGY DIFFERENCES IN
MANAGER-CONTROLLED, OWNER-CONTROLLED AND OWNER-MANAGED ORGANIZATIONS

H	Compensation Dimension	Manager-Controlled	Owner-Controlled	Owner-Managed
1	Pay level	higher	lower	lower
2	Structure height	higher	lower	lower
3	Income inequality	greater	lesser	lesser
5	Pay for performance	less	more	more
6	Bonus eligibility	less	more	more
7	Long-term performance incentives	less	more	more
8	Percentage bonus pay	lower	higher	higher
9	Change in pay related to	growth	performance	performance

CHAPTER 2
METHODS

In this chapter the specific aspects of the test of the hypotheses advanced in chapter one are discussed. It includes a discussion of the sample, measures, models and statistical techniques used to test each of the hypotheses.

Sample

The data used to test the hypotheses were obtained from the CAHRS (Center for Advanced Human Resource Studies) Data Base from the School of Labor and Industrial Relations of Cornell University. The data base includes information about more than 200,000 lower, middle and top level managers from over 800 organizations between the years 1981 and 1988. However, most firms did not provide data for all these years. The average years of participation by firms was 3.6 years.

These data were made available to CAHRS by a large consulting firm which specializes in the design of compensation systems. The participating firms reported pay, personal and position variables for a representative sample of approximately 75 to 100 managers. The variables include education level, firm tenure, eligibility for long-

term incentives, year of birth, number of employees supervised, and number of reporting levels between the board of directors and the subject's position.

The subjects in the data base are from a broad spectrum of positions, including CEOs, profit center heads, legal workers and human resources generalists and specialists. Managers came from a range of functional areas such as manufacturing, marketing, finance, government relations, information systems, research and development, engineering, planning and acquisitions, and material handling.

The variables obtained from the CAHRS data base were combined with ownership information obtained from proxy statements. The proxy statements provide the percent stock holdings of all share holders owning more than 5% of outstanding stock. Since proxy statements are only required by the SEC for firms with more than 50 shareholders, many of the companies in the survey were not used in the analysis because no ownership data was available. Thus, the final sample was limited to the 307 firms where ownership data was available, and ownership structure did not change over the surveyed period.

Though there are limitations with this data base and the sample which we will discuss more fully in the last chapter, the sample used is particularly suitable for testing the hypotheses because of: 1) the large number of firms and individuals surveyed, 2) the number of personal

and job variables included in the survey, and 3) the range of size of firms included in the survey. Past research on managerial pay has been hampered by a restriction of range problem (related to size) since most researchers have used relatively homogenous Fortune 500 firms (Fizel, Louie, and Mentzer, 1990).

Measures

Because the hypotheses relate firm ownership to firm compensation strategy, our level of analysis is exclusively at the firm level. Thus, all variables were analyzed at the firm level, even though they may have been calculated by aggregating individual level data. This is necessary since we wish to make inferences about firm behaviors, rather than individual determinants of pay. All financial data were adjusted to December 1992 dollars using the Consumer Price Index (Gerhart and Milkovich, 1990; Finkelstein and Hambrick, 1989).

Most firms are not represented consistently throughout the eight surveyed years, which necessitates the use of average values for the variables in the models over the eight years. Pooling data across years into averages provide more accurate, reliable and valid measures (Zajac, 1990; Gomez-Mejia, Tosi, and Hinkin, 1987; McEachern, 1975). Averages over the eight year period were computed for all variables for all years available. The period from 1981 to 1988 was the maximum period used for averaging. Firms were

only included if they did not have a change in type of control (owner-controlled, manager-controlled, or owner-managed) over the years when compensation data was available.

Organizational Variables

Organizational level variables include the ownership structure, size, change in size, financial performance, and change in financial performance.

Ownership. Although the conventional approach to control has been to designate firms as owner-controlled if at least 5% of their outstanding stock is in the hands of one individual or organization that was not involved in the actual management of the company, the analysis of proxy statements permitted a refinement of that convention, resulting in a measure of ownership more reflective of actual control. Some institutional owners do not have voting power over the stock they own, disclaiming beneficial ownership in their SEC notifications, which is noted in the proxy statements. Even when owners have not disclaimed beneficial ownership, proxy statements often indicate when 5% owners have only disposition rights rather than voting rights over their shares. Also, many firms have employee stock option plans, savings plans, or profit sharing plans which own more than 5% of the outstanding stock, but do not disclaim beneficial ownership. It is unlikely that the

trustees of such plans exert influence or control of the firm. Thus, we use a dichotomous ownership variable which classifies owner-controlled firms as those where at least 5% of the firm's outstanding stock is in the hands of one individual or organization that was not involved in the actual management of the company, that did not deny beneficial ownership, that did not report only disposition rights, or was not an employee benefit plan. Table 2-1 reports the descriptive statistics of the 154 owner-controlled, 112 manager-controlled and 41 owner-managed firms in the sample.

Size. Conventional measures of size are the number of employees, sales, and assets. All been frequently used as a measure of size (e.g., Gerhart and Milkovich, 1990; O'Reilly, Main, and Crystal, 1988; Tosi and Gomez-Mejia, 1989; Finkelstein and Hambrick, 1989; Rajagopalan and Prescott, 1990; Ciscel and Carroll, 1980). In this study, the measure of organizational size is a composite index constructed from the standardized number of employees, assets and sales. These separate standard scores were weighted by factor loadings obtained from a factor analysis. The factor accounted for 84% of the variance of the three variables. The factor loadings of assets, sales, and number of employees were .96, .93, and .85, respectively. Appendix A reports the factor analysis used to create the composite size variable.

TABLE 2-1
DESCRIPTIVE STATISTICS OF FIRMS IN THE SAMPLE

Ownership	Assets (Mil$)	Number of Employees (1,000s)	Sales (Mil$)	Size	ROA	ROE	Perform-ance	N
Owner-Controlled	2.09 (3.85)	14.9 (20.4)	2.61 (4.81)	-0.24 (0.331)	0.05 (0.04)	0.11 (0.09)	-0.10 (0.95)	154
Manager-Controlled	9.85 (14.8)	53.9 (66.8)	10.3 (16.9)	0.45 (1.21)	0.05 (0.04)	0.12 (0.08)	-0.01 (0.87)	112
Owner-Managed	1.64 (3.79)	9.1 (14.7)	1.75 (3.21)	-0.32 (0.28)	0.08 (0.05)	0.15 (0.08)	0.41 (1.10)	41
All Organizations	4.86 (10.1)	28.4 (47.2)	5.30 (11.4)	0.00 (0.84)	0.06 (0.04)	0.12 (0.08)	0.00 (0.96)	307

Note: Standard Deviations in parentheses.

Composite performance measures are preferred because 1) they have been shown to have satisfactory internal reliability, 2) individual indices have severe limitations, and 3) potential collinearity problems exist among the variables (see Tosi and Gomez-Mejia, 1993).

Change in size. Change in size is measured by a composite of the changes in assets, number of employees, and sales weighted by a factor analysis. Change in assets in year t was calculated by assets in year t minus assets in year t-1 all divided by assets in year t-1. Change in number of employees and change in sales were similarly calculated. These three change scores were then factor analyzed. The factor weightings of change in assets, change in sales, and change in number of employees were .76, .79, and .79, respectively (see Appendix A). The factor accounted for 61% of the variance of these three variables. The three change scores were then standardized and weighted by their factor loadings to create the change in size composite index.

Financial performance. Performance was measured by two variables: Return on Assets (ROA) and Return on Equity (ROE), both are part of the CAHRS data base and are commonly used performance measures (e.g. O'Reilly, Main, and Crystal, 1988; Gerhart and Milkovich, 1990; Zajac, 1990; Finkelstein and Hambrick, 1989; Rajagopalan and Prescott, 1990; Abowd, 1990). Return on Assets is defined as net income divided by

assets. Return on Equity is defined as net income divided by average stockholders' equity and has been described as the single most significant measure of corporate profitability and efficiency (Winfrey, 1990). Because of high collinearity, ROE and ROA were standardized and averaged to create the composite performance index.

Change in financial performance. Change in financial performance is measured by a composite index of standardized change in ROE and change in ROA. Change in ROE (and ROA) was calculated by ROE (and ROA) in year t minus ROE (and ROA) in year t-1. The two variables were then standardized and averaged to create the change in performance composite index.

Employee Variables

There were two variables which represented managerial human capital: years of education and years of experience. Because the analysis is at the firm level each of the employee variables was aggregated by firm. Thus, for example, the resulting variable - Years of Education - was the average years of education of all surveyed managers in the firm.

Years of education was used to control for different levels of general knowledge of managers surveyed across firms. It is simply the number of years of formal education the job incumbent has. Change in years of education for

year t was calculated as average years of education in year t minus average years of education in year t-1, all divided by average years of education in year t-1.

Years of experience is a composite measure which includes years of potential market experience and years of firm specific experience. Years of potential market experience was calculated by age minus years of education minus 6, and measures the potential experience of incumbents in the labor market (Gerhart and Milkovich, 1990). Years of firm specific experience is simply the number of years the employee has been with the firm. The two were used to form the composite because of collinearity. Change in years of experience for year t was calculated as average years of experience in year t minus average years of experience in year t-1, all divided by average years of experience in year t-1.

Job Variables

There were two measures of job properties: job level and number of employees supervised. These variables were also aggregated by firm to control for significant job differences surveyed across firms.

Job level measures the number of reporting levels between the company's board of directors and the position of the incumbent. For example, the CEO is at level 1, those who report directly to the CEO are at level two, and so on.

Employees supervised is the number of exempt and non-exempt employees supervised directly and indirectly. It is a measure of supervisory responsibility. Although the number of employees supervised is equivalent to the total number of employees in the firm for the CEO, in aggregate it is the average number of employees supervised by all surveyed managers in the firm. Although related to size, it is theoretically, and empirically distinguishable from size.

Industry Variables

Industry effects are controlled through industry dummy variables (O'Reilly, Main, and Crystal, 1988; Fisher and Govindarajan, 1992). Firms were included in the analysis only if there were at least two other firms with identical 2 digit SIC codes (Gerhart and Milkovich, 1990). Two digit SIC codes have been successfully used to control for industry differences in the context of this data set (Leonard, 1990; Gerhart and Milkovich, 1990). See Appendix B for a list of industries included in the sample.

Compensation Strategy Measures

Some compensation measures were calculated from aggregated individual compensation information on salary, bonuses, and eligibility for long-term incentives. The remaining compensation measures, such as number of employees

eligible for bonuses were obtained from the organizational level survey.

Pay level. Pay level is measured as the sum of annual salary plus bonus. Other components of compensation such as benefits and long-term incentives were not available, but this poses no serious problem as simple measures of cash compensation have served as an excellent proxy for total remuneration (Finkelstein and Hambrick, 1989; Agarwal, 1981). Further, there are other practical and methodological problems with these other components, such as the difficulty in valuation and acquisition of reliable data (Rajagopalan and Prescott, 1989; Kerr and Bettis, 1987).

Change in pay level. Change in pay for year t is measured by the total pay (salary + bonus) in year t minus the total pay in year t-1 all divided by total pay in year t-1 for all surveyed managers.

Pay structure height. Two measures of pay structure height are used. The first measure is the number of levels. Clearly given stable differences between levels, more levels lead to higher structures. Second, the average percent difference between levels will be used. Given any number of levels, a greater average percent pay distance between levels will lead to taller structures.

Inequality of structure. Two measures of inequality are used, the ratio of CEO pay to average managerial pay and

the Gini coefficient. Ratios of CEO pay to lower employees' pay are often used descriptively to characterize inequality (e.g., Cowherd and Levine, 1992; Gerhart and Milkovich, 1993). Higher ratios of CEO pay to average managerial pay show greater inequality of pay.

The Gini coefficient is derived from the Lorenz curve. The Lorenz curve (See figure 2) depicts the share of total labor costs received by the bottom t ($0<t<1$) proportion of the employee population (Chakravarty, 1990). Perfect pay equality, where all employees earn the same is represented by the line of equality. Where there are differences in pay, the Lorenz curve is concave.

The Gini index is a measure of pay inequality and equals 1 minus twice the area under the Lorenz curve (Shalit, 1985). Smaller Ginis indicate less inequality (Gerhart and Milkovich, 1993). For example, if there is perfect pay equality in a firm, the Gini coefficient is zero. In a firm with perfect inequality, where one person earns all the money, the Gini coefficient approaches one. The Gini coefficient can be computed by

$$\frac{\frac{1}{n^2}\cdot\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i-x_j|}{2\bar{x}}$$

where: n= number of employees
x= pay
(Chakravarty, 1990).

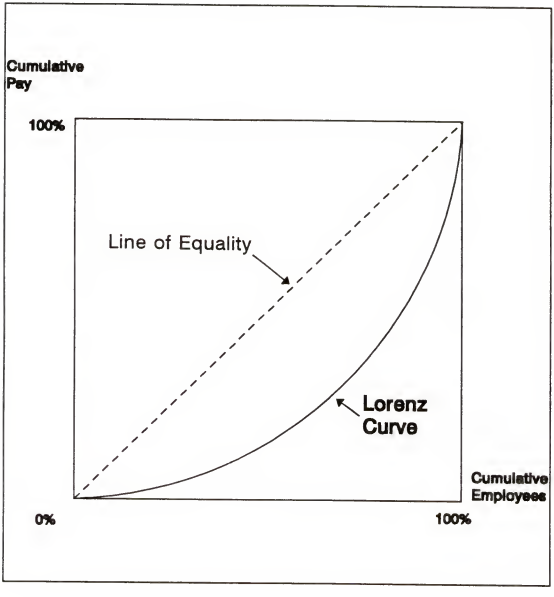

FIGURE 2
LORENZ CURVE

In this study, the Gini coefficient cannot be computed using the subjects from each organization in the sample, because the results would be strongly biased by the number

of respondents at each level since some firms may have included more high level employees in the data which were provided to the CAHRS files. Therefore the Gini coefficient for managerial pay was calculated using the formula on average pay per level times the number of managers estimated at that level. Since each firm included numerous employees from each managerial level, a reasonable estimate of average pay at each level could be computed. The number of managers at each level was determined from an estimate of the spans of control by level within each organization. The span of control estimates were applied equally to each firm, since differences in span of control across firms would affect Gini coefficients.

Previous theory and research suggests that a good estimate of the average span of control of CEOs is five, and of the lowest level of managers is approximately twenty with middle levels ranging somewhere in between (Fayol, 1949, Davis, 1951; Dale, 1952; Ouchi and Dowling, 1974; Janger, 1960; Collins and Hull, 1986; Entwisle and Walton, 1961). Here span of control will be estimated as five for CEO's, six for level two managers, seven for level three managers, nine for level four managers, twelve for level five managers, sixteen for level six managers, and twenty for managers at level seven and higher. Thus the Gini coefficient of managerial pay was calculated using the

formula on average pay per level times the number of managers estimated at that level.

Percentage of employees eligible for bonus. This variable is calculated by dividing the number of employees eligible for bonus by total number of employees per company.

Percentage of managers eligible for long-term performance incentives. This variable is calculated by dividing the number of surveyed managers who are eligible for long-term performance incentives by the total number of surveyed managers in each firm.

Bonus to total pay ratio. This variable is calculated by dividing the average bonus of surveyed managers by the average total pay of surveyed managers in each firm.

Models

In this section we specify the models used to test the hypotheses advanced in the previous chapter. The models are based on the work of Gerhart and Milkovich (1990) in which the variables include employee, job, organization and industry dummies as previously discussed. There are three primary differences between our model and theirs. First, we will be using various compensation strategy variables as the dependent measure, rather than only pay level. Second, our analysis is at the firm level, to allow for inferences in firm compensation strategies, rather than individual

determinants of pay. Third, our models include ownership structure. In all the models there are three classes of variables. The dependent variables are the pay measures. The independent variables are the measures of ownership structure. The control variables are employee, job, organizational and industry variables where applicable.

Control Variables

The control variables are particularly critical because they are factors generally used by consulting firms to determine wages, as well as factors which have been found to be related to pay in previous research. Consulting firms generally develop pay structures based on jobs. The greater the skill, knowledge, and responsibility requirements of the job the greater the wage (Milkovich and Newman, 1993). Wages are also formulated by surveying firms in the same industry with comparable jobs to create external wage equity (Milkovich and Newman, 1993). Thus, we expect these variables to be systematically related to pay, and wish to remove their effects to estimate the effects of the independent variables of interest in this research. The control variables will include aggregated individual and job variables, as well as organizational and industry variables when applicable.

Individual control variables. Aggregated years of education, years of potential labor market experience and

years of firm specific experience are used to control for aggregate differences in the human capital within surveyed firms. Human capital theory (Becker, 1964) suggests that differences in earnings can be attributed to investments in training as well as general and specific employment experience. Additionally, education level is a factor often used by firms to address the knowledge requirements of a job, while labor market experience and firm experience are often used by firms to address the skill requirements of a job. That is, people with higher education and experience are more likely to hold jobs requiring greater knowledge and skills.

Job control variables. Level of the job and the number of employees the job supervises are used to control for aggregate differences in the responsibility of subjects in the sample. Skill and knowledge requirements generally increase as one progresses up a firm's hierarchy, suggesting that higher level jobs pay more. The more employees an incumbent supervises the greater the responsibility. Thus, the level of the job and the number of employees supervised are related to skill and knowledge, and responsibility, factors used to value jobs.

Organizational Control Variables. Financial performance and organization size are used to control for differences in the surveyed firms in the test of some hypotheses. Larger firms tend to pay more (see chapter 1).

Ability to pay has also been frequently attributed as a reason for organizational pay differences (Milkovich and Newman, 1993). Firms with greater financial success have the financial capabilities to pay their employees more.

Industry differences have also been shown to affect pay. For example, high tech firms have a higher bonus to total pay ratio than non-high tech firms (Balkin and Gomez-Mejia, 1987). Intra-industry competitiveness and differences in labor costs as a percentage of total costs have been used to explain some industry effects (Fay, 1989). Since compensation surveys (which are used to determine wages) are generally industry specific, we expect significant differences by industry. Empirical evidence suggests that differences in financial performance, size and industry affect compensation strategy, and thus the need to use control variables for each (see Brown and Medoff, 1989; Fay, 1989; Gerhart and Milkovich, 1990).

Specification of the Models to be Tested

Each of the hypotheses is tested with different sets of variables using Ordinary Least Squares regression. The regression models used to test each hypothesis are specified in the following section.

Model for Hypothesis One. The first hypothesis indicated that manager-controlled organizations have higher pay levels than owner-controlled and owner-managed

organizations. The model to test this hypothesis is:

$$Y_i = Z_iA + W_iB + O_iC + e_i$$

where

Y = a vector of pay level measuring average compensation cost of surveyed managers for organization i.

Z = a matrix of observations of mean individual and job variables.

W = a matrix of three organizational characteristics, industry, size, and financial performance.

O = a matrix of dummy variables representing ownership structure.

A,B & C= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Two. The second hypothesis focussed on the differences in the height of the pay structure. It was hypothesized that manager-controlled organizations have taller pay structures than owner-controlled and owner-managed organizations. The model to test this hypothesis is

$$Y_i = W_iA + O_iB + e_i$$

where

Y = a vector of pay structure height for firm i.

W = a matrix of organization size, performance, and industry.

O = a matrix of dummy variables representing ownership structure.

A & B = coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Three. Income equality differences between the various types of ownership structure were hypothesized. Specifically, manager-controlled organizations have greater income inequality than owner-controlled and owner-managed organizations. This hypothesis was tested with the following model:

$$G_i = W_iA + O_iB + e_i$$

where

G = a vector of inequality for organization i.

W = a matrix of organizational size, performance and industry.

O = a matrix of dummy variables representing ownership structure.

A & B= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Four. It was hypothesized that organizations with greater income equality will perform better than those with greater income inequality. The test of this hypothesis is given as:

$$Y_i = P_iA + G_iB + e_i$$

where

Y = a vector of financial performance for firm i.

P = a matrix of organizational ownership structure, size and industry.

G = a vector of inequality for i organization.

A & B= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Five. The fifth hypothesis was that the managerial pay of owner-controlled and owner-managed organizations is more strongly correlated with performance than the managerial pay of manager-controlled organizations. This was tested with the following formulations:

$$Y_i = W_iA + Z_iB + X_iC + e_i \quad \text{for OC firms.}$$
$$Y_i = W_iA + Z_iB + X_iC + e_i \quad \text{for OM firms.}$$
$$Y_i = W_iA + Z_iB + X_iC + e_i \quad \text{for MC firms.}$$

where

Y = a vector of pay level measuring average compensation cost of surveyed managers for organization i.

Z = a matrix of observations of mean individual and job variables.

W = a matrix of organizational size and industry.

X = a vector of financial performance.

A,B & C= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Six. It was hypothesized that the percentage of employees eligible for bonuses will be greater in owner-controlled and owner-managed organizations than in manager-controlled organizations. This relationship is defined in the model below:

$$Y_i = W_iA + O_iB + e_i$$

where

Y = a vector of the average percent of bonus eligible employees in organization i.

W = a matrix of organizational financial performance, size and industry.

O = a matrix of dummy variables representing ownership structure.

A & B= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Seven. It was hypothesized that owner-controlled and owner-managed organizations will use a greater percentage of long-term performance incentives than manager-controlled organizations. The specification of this model is:

$$Y_i = W_iA + O_iB + e_i$$

where

Y = a vector of average percentage of surveyed managers eligible for long-term performance incentives in organization i.

W = a matrix of three organizational characteristics, industry, size, and financial performance.

O = a matrix of dummy variables representing ownership structure.

A & B= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Eight. It is expected that managerial pay in owner-controlled and owner-managed organizations has a greater percentage of bonus pay than managerial pay in manager-controlled organizations. This was tested with the following model:

$$Y_i = W_iA + O_iB + e_i$$

where

Y = a vector of average bonus to total pay ratio of surveyed managers in organization i.

W = a matrix of three organizational characteristics, industry, size, and financial performance.

O = a matrix of dummy variables representing ownership structure.

A and B= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Model for Hypothesis Nine. Both agency theory and managerial theory suggest that changes in managerial pay will be related to changes in financial performance and absolute financial performance level in owner-controlled firms and owner-managed firms, but not in manager-controlled firms. The following models were used to evaluate this proposition:

$$Y_i = Z_iA + W_iB + P_iC + e_i \text{ for OC firms}$$
$$Y_i = Z_iA + W_iB + P_iC + e_i \text{ for OM firms}$$
$$Y_i = Z_iA + W_iB + P_iC + e_i \text{ for MC firms}$$

where

Y = a vector of average change in pay in firm i.

Z = a matrix of change in individual and change in job variables.

W = a matrix of industry and change in size.

P = a matrix of change in financial performance and absolute performance.

A,B & C= coefficient vectors.

e = an error term that includes unmeasured causes of Y.

Summary

Both agency theory and managerialism suggest a relationship between a firm's ownership structure and its compensation strategy. We propose a number of hypotheses specifying that relationship. To test these hypotheses we use proxy statements, and the CAHRS data base, which

consists of compensation information of over 800 companies over eight years. We use a variation of Gerhart and Milkovich's (1990) model, which controls for effects of differences in employee, job, and organizational level variables. We further specified the statistical model used to test each hypothesis. The next chapter describes the results of the hypotheses tests.

CHAPTER 3
RESULTS

The results of the hypotheses tests are grouped by the three compensation decision areas. The correlation matrix of the variables in each model is shown, followed by the results of each hypothesis test. The regression coefficients, standardized betas, and significance of each variable in the model is shown along with the R squared and adjusted R squared of each model. The correlation matrix of all variables used to test all hypotheses is reported in Appendix C.

Pay Level

The correlation matrix of all the variables in the pay level model (except for the 33 industry dummy variables) is shown in Table 3-1. Hypothesis one was tested using both base pay and total pay. Table 3-2 shows the regression weights, standardized betas and significance of the variables in the two models (the 33 industry dummy variables were included in the model but are not shown in the table). All the control variables except for size were significant predictors of total pay. This can be explained by the correlations between size, mean number of employees

TABLE 3-1
CORRELATION MATRIX FOR PAY LEVEL VARIABLES

	Performance	Size	Mean # of Employees Supervised	Mean Level of Manager	Mean Experience	Mean Years Education	Mean Base Pay (thousands)	Mean Total Pay (thousands)
Mean	0.00	0.00	1378	3.9	21.4	16.5	$125.9	$158.6
St. Dev.	0.96	0.84	2124	0.7	4.3	0.59	$44.4	$67.7
Performance	1.00							
Size	0.08	1.00						
# of Emps. Sup.	0.09	0.67**	1.00					
Mean Level	0.01	0.25**	-0.06	1.00				
Mean Experience	0.02	0.41**	0.40**	0.12*	1.00			
Mean Education	0.05	0.23**	0.25**	-0.23**	-0.01	1.00		
Mean Base Pay	0.08	0.50**	0.70**	-0.28**	0.39**	0.56**	1.00	
Mean Total Pay	0.17**	0.49**	0.74**	-0.26**	0.40**	0.51**	0.96**	1.00
Owner-Controlled	-0.11	-0.29**	-0.27**	-0.11*	-0.13*	-0.09	-0.23**	-0.24**
Man.-Controlled	-0.01	0.40**	0.39**	0.13*	0.31**	0.16**	0.36**	0.37**
Owner-Managed	0.17**	-0.15**	-0.16**	-0.02	-0.24**	-0.09	-0.18**	-0.17**

Note: * p<.05
** p<.01
N ranges from 272 to 307.

TABLE 3-2
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS TESTING HYPOTHESIS ONE

	PAY LEVEL			
	Total Pay (N=271)		Base Pay (N=271)	
Variables	Regression Weights	Standardized Beta	Regression Weights	Standardized Beta
Mean Level	-$17,638**	-0.19	-$13,933**	-0.23
Mean Education	$34,665**	0.30	$25,986**	0.35
Mean Experience	$2,155**	0.14	$1,695**	0.17
Mean # of Emps Supervised	$21**	0.61	$11**	0.48
Performance	$6,310**	0.09	$170	0.00
Size	-$2,339	-0.03	$3,335	0.06
Owner-Controlled	-$13,095**	-0.10	-$6,431	-0.07
Owner-Managed	-$15,044*	-0.08	-$7,213	-0.06
R^2	0.82**		0.80**	
Adjusted R^2	0.78**		0.76**	

Note: * $p<.05$
** $p<.01$

supervised, and mean level of the managers surveyed. Mean level and mean number of employees supervised are both highly significant in the model, removing much of the variance due to size. Of the 33 industry dummy variables, eight were found to be significantly ($p<.05$) related to total pay, and nine were significantly related to base pay. Performance was a predictor for total pay, but not for base pay.

Owner-controlled and owner-managed firms pay their managers significantly less than manager-controlled firms.

The dummy variables representing OC and OM firms were both significant ($p<.01$ and $p<.05$ respectively) predictors of total pay level. The effects of ownership structure to base pay was marginally significant ($p<.06$). Thus, it appears that managers in MC firms receive significantly higher total pay (through bonuses) than managers in OC and OM firms, and marginally higher base salaries than managers in OC firms.

Our discussion on agency theory and cascading suggests that this relationship will hold at all levels. To investigate this, we ran the identical model of total pay by firm level for levels one through six. The model was not applied to levels lower than the sixth, because of the reduced sample size ($n<133$) at lower levels. Mean number of employees supervised was not included in the model for level one, because at level one the number of employees supervised is equivalent to total number of employees in the firm, a factor used to create the size composite. Table 3-3 depicts the regression weights, standardized betas and significance of the model at each of the six levels. The regression weights show the cost of being a manager in a OC or OM organization by level. Even at the sixth level, managers in OC firms earn $7,299 less in total pay than managers in MC firms. Compared to OC firms, MC firms pay their managers more at all six firm levels studied. The same trend seems to exist for OM firms, though the regression coefficients are not significant except in the cases of levels 1 and 3.

TABLE 3-3
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS OF TOTAL PAY BY ORGANIZATIONAL LEVEL

	TOTAL PAY BY LEVEL					
	Level 1 (N=264)	Level 2 (N=267)	Level 3 (N=270)	Level 4 (N=258)	Level 5 (N=239)	Level 6 (N=200)
Variables	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)
Mean Education	$7,781 (.03)	$39,537 (.19)**	$30,467 (.21)**	$20,834 (.24)**	$18,101 (.39)**	$8,708 (.29)**
Mean Experience	$3,250 (.07)	$3,823 (.13)*	$2,755 (.14)**	$2,628 (.22)**	$1,751 (.21)**	$1,049 (.18)**
Mean # of Emps Supd		$7.39 (.50)**	$16.5 (.52)**	$25.6 (.44)**	$17.9 (.27)**	$27.9 (.33)**
Performance	$32,695 (.09)	$25,324 (.14)**	$8,808 (.09)*	$4,505 (.07)*	$1,153 (.03)	-$359 (-.01)
Size	$265742 (.58)**	$36,761 (.17)**	$24,124 (.20)**	$17,890 (.24)**	$15,318 (.30)**	$16,169 (.38)**
Owner-Controlled	-114850 (-17)**	-$45535 (-14)**	-$23221 (-13)**	-$10260 (-.09)*	-$7,899 (-.10)*	-$7,299 (-.10)*
Owner-Managed	-219063 (-22)**	-$43013 (-.09)	-$22206 (-.08)*	-$10992 (-.06)	-$8,001 (-.07)	-$9,339 (-.09)
R^2	.60**	.65**	.76**	.77**	.79**	.75**
Adjusted R^2	.52**	.58**	.72**	.72**	.75**	.69**

Note: * p<.05
** p<.01
Standardized Betas in Parentheses

In this sample, managers in owner-controlled firms and owner-managed firms earned an average of $6,431 and $7,213 less in salary and $13,095 and $15,044 less in total pay than managers of manager-controlled firms (see table 3-2). These figures vary by firm level, with greater differences at higher levels.

Pay Structure

Table 3-4 displays the correlation matrix for all variables used in the pay structure models. We report the results of the pay structure tests by hypothesis.

Hypothesis Two

Hypothesis two proposed manager-controlled firms will have taller structures than owner-controlled firms or owner-managed firms, even when controlling for size, performance, and industry. Structure height was measured by the number of managerial levels, and the average percent difference between levels in base and total pay. Table 3-5 shows the regression weights, standardized betas and significance of the models. Only the control variable (size) and two of the industry dummy variables were significant ($p<.05$) predictors of number of managerial levels. This suggests that although manager-controlled firms do have a significantly greater number of managerial levels, it is only due to the fact that manager-controlled firms are larger, and larger firms have a greater number of managerial levels (see table 3-4). Neither ownership nor size was found to predict mean total or base pay difference between levels. Therefore, hypothesis two was not supported.

TABLE 3-4
CORRELATION MATRIX FOR PAY STRUCTURE VARIABLES

	Performance	Size	Mean Total Pay Diff. Between Levels	Mean Base Pay Diff. Between Levels	Gini for Total Pay	Gini for Base Pay	CEO to avg. manager Total Pay	CEO to avg. manager Base pay	Number of Managerial Levels
Mean	0.00	0.00	1.64	1.54	0.035	0.029	4.72	4.03	6.13
St. Dev.	0.96	0.84	0.186	0.156	0.027	0.023	1.56	1.11	1.50
Performance	1.00								
Size	0.08	1.00							
Total Pay Difference	0.07	0.01	1.00						
Base Pay Difference	-0.04	-0.04	0.91**	1.00					
Gini for Total Pay	0.08	-0.07	0.57**	0.58**	1.00				
Gini for Base Pay	0.05	-0.06	0.54**	0.60**	0.97**	1.00			
CEO/Manager Total	0.05	0.23**	0.16**	0.01	-.39**	-0.42**	1.00		
CEO/Manager Base	-0.08	0.19**	0.08	0.08	-.42**	-0.43**	0.91**	1.00	
# of Mngmnt Levels	0.01	0.30**	-0.54**	-0.60**	-.64**	-0.66**	0.56**	0.57**	1.00
Owner-Controlled	-0.11	-0.29**	0.06	0.04	0.08	0.07	-0.03	-0.05	-0.09
Manager-Controlled	-0.01	0.40**	0.01	0.02	-.08	-0.09	0.13*	0.16**	0.15**
Owner-Managed	0.17**	-0.15**	-0.10	-0.10	0.01	0.02	-0.14**	-0.15**	-0.07

Note: * p<.05
** p<.01
N ranges from 274 to 307.

TABLE 3-5
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS TESTING HYPOTHESIS TWO

	PAY STRUCTURE HEIGHT		
	Number of Managerial Levels (N=307)	Mean Total Pay Difference Between Levels (N=297)	Mean Base Pay Difference Between Levels (N=297)
Variables	Weights (Std. Betas)	Weights (Std. Betas)	Weights (Std. Betas)
Size	0.54** (0.30)	-0.00 (-0.02)	-0.02 (-0.08)
Performance	-0.07 (-0.05)	0.02 (0.08)	0.00 (-0.03)
Owner-Controlled	-0.13 (-0.04)	0.01 (0.03)	0.00 (-0.01)
Owner-Managed	-0.14 (-0.03)	-0.05 (-0.09)	-0.04 (-0.09)
R^2	0.22**	0.12	0.14
Adjusted R^2	0.11**	0.00	0.01

Note: * $p<.05$
** $p<.01$

Hypothesis Three

Hypothesis three proposed that manager-controlled firms would have greater inequality in managerial pay than owner-controlled or owner-managed firms, even when controlling for the number of managerial levels, size, performance, and industry. Inequality of managerial pay was measured by the Gini coefficient for base and total pay, and by the ratio of CEO pay to average managerial pay for base pay and total pay for a total of four models. Table 3-6 shows the regression weights, standardized betas and significance of the models.

TABLE 3-6
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS TESTING HYPOTHESIS THREE

	PAY STRUCTURE INEQUALITY			
	Total Pay		Base Pay	
	Gini (N=274)	CEO to Manager Pay Ratio (N=300)	Gini (N=274)	CEO to Manager Pay Ratio (N=300)
Variables	Weights (Std. Betas)	Weights (Std. Betas)	Weights (Std. Betas)	Weights (Std. Betas)
Size	0.005** (0.16)	0.08 (0.04)	0.006** (0.19)	-0.02 (-0.02)
Performance	0.001 (0.02)	0.08 (0.05)	0.000 (-0.02)	-0.09 (-0.08)
Number of Managerial Levels	-0.014** (-0.67)	0.55** (0.52)	-0.012** (-0.69)	0.40** (0.53)
Owner-Controlled	0.001 (0.01)	-0.04 (-0.01)	0.001 (0.02)	-0.13 (-0.06)
Owner-Managed	-0.001 (-0.01)	-0.43 (-0.09)	0.002 (0.03)	-0.33 (-0.10)
R^2	0.50**	0.40**	0.52**	0.43**
Adjusted R^2	0.41**	0.32**	0.45**	0.34**

Note: * $p<.05$
** $p<.01$

Although none of the industry dummy variables were significant predictors of the base or total pay Ginis, eight were significantly ($p<.05$) related to the ratio of CEO total pay to average managerial total pay, and thirteen were significantly ($p<.05$) related to the ratio of CEO base pay to average managerial base pay. In no case was ownership significantly related to a measure of inequality. Thus, although CEO pay is significantly closer to the average

manager's pay in owner-managed firms than in manager-controlled firms, it is only because this is the case for firms with fewer managerial levels, and owner-managed firms have fewer managerial levels than manager-controlled firms. Thus, hypothesis three was not supported.

Hypothesis Four

Hypothesis four proposed that firms with greater inequality have poorer performance, even when controlling for size, ownership and industry effects. Table 3-7 shows the regression coefficients, standardized beta weights and significance of the models using the gini coefficient of total and base pay and the ratio of CEO pay to average managerial total and base pay. In no case was inequality related to firm performance. Two of the industry dummy variables predicted performance ($p<.05$) in each model. Thus, hypothesis four was not supported.

Individual Differences in Pay

Table 3-8 displays the correlation matrix for the measures of individual differences in pay. We report the results of the individual differences in pay tests by hypothesis.

TABLE 3-7
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS TESTING HYPOTHESIS FOUR

	DEPENDENT VARIABLE : FIRM PERFORMANCE			
	Measure of Inequality Used			
	Total Pay Gini (N=274)	CEO to Manager Total Pay Ratio (N=300)	Base Pay Gini (N=274)	CEO to Manager Base Pay Ratio (N=300)
Variables	Weights (Std. Betas)	Weights (Std. Betas)	Weights (Std. Betas)	Weights (Std. Betas)
Measure of Inequality	2.65 (0.07)	0.01 (0.02)	1.73 (0.04)	-0.10 (-0.12)
Size	0.45 (0.07)	0.16* (0.14)	0.08 (0.07)	0.19* (0.16)
Owner-Controlled	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)	0.00 (0.00)
Owner-Managed	0.45* (0.16)	0.49** (0.18)	0.45** (0.16)	0.44* (0.16)
R^2	0.19*	0.18*	0.19*	0.19*
Adjusted R^2	0.06*	0.06*	0.06*	0.07**

Note: * $p<.05$
** $p<.01$

Hypothesis Five

Table 3-9 shows the regression coefficients, standardized betas, and significance of predictors of total pay in both owner-controlled and manager-controlled firms. Firms were included if they were in an industry that contained three or more firms in the sample after separating the data by ownership. Each model was run including industry dummy variables. The owner-controlled sample

TABLE 3-8
CORRELATION MATRIX FOR INDIVIDUAL DIFFERENCES
IN PAY VARIABLES

	Percent of Employees Bonus Eligible	Percent of Managers Eligible For Long Term Incentives	Ratio of Bonus to Total Pay for Managers
Mean	0.046	0.701	0.182
St. Dev.	0.105	0.302	0.091
% of Employees Bonus Eligible	1.00		
% Long-Term Eligible	-0.15**	1.00	
Bonus/Total Pay	-0.04	0.32**	1.00
Performance	-0.04	0.12*	0.33**
Size	-0.10	0.10	0.25**
Owner-Controlled	0.02	-0.08	-0.14*
Manager-Controlled	-0.14*	0.18**	0.22**
Owner-Managed	0.16**	-0.14*	-0.11

Note: * p<.05
** p<.01
N ranges from 283 to 307.

included firms from 19 industries. The manager-controlled sample included firms from 11 industries. Analysis was not possible for owner-managed firms because the sample size was too small to provide meaningful results (n=26 in six industries).

Total pay in owner-controlled firms was significantly related to mean number of employees supervised, mean level, mean education, mean experience, and one of the industry dummy variables. Similarly, total pay in manager-controlled firms was related to mean number of employees supervised,

TABLE 3-9
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODELS TESTING HYPOTHESIS FIVE

	TOTAL PAY LEVEL			
	Owner-Controlled (N=114)		Manager-Controlled (N=68)	
Variables	Regression Weights	Std. Beta	Regression Weights	Std. Beta
Mean Level	-$20,262**	-0.27	-$21,332**	-0.22
Mean Education	$24,719**	0.31	$45,858**	0.33
Mean Experience	$1,638*	0.12	$3,709**	0.22
Mean # of Emps Supervised	$24**	0.56	$16**	0.65
Size	$22,644	0.12	-$1,943	-0.02
Performance	$3,982	0.06	$7,300	0.07
R^2	0.83**		0.85**	
Adjusted R^2	0.79**		0.80**	

Note: * p<.05
** p<.01

mean level, mean education, mean experience, and three of the industry dummy variables. Performance was not a significant predictor of total pay in the owner-controlled or manager-controlled sample.

Hypothesis Six

Hypothesis six proposed that a greater percentage of employees will be eligible for bonuses in owner-controlled and owner-managed firms than in manager-controlled firms even when controlling for performance, size, and industry. Percentage of employees eligible for bonuses was calculated by dividing total number of bonus eligible employees by the

TABLE 3-10
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODEL TESTING HYPOTHESIS SIX

	Percentage of Bonus Eligible Employees (N=295)	
Variables	Regression Weights	Standardized Betas
Size	0.001	(0.01)
Performance	-0.010	(-0.09)
Owner-Controlled	0.018	(0.08)
Owner-Managed	0.050*	(0.16)
R^2	0.23**	
Adjusted R^2	0.12**	

Note: * $p<.05$
** $p<.01$

total number of employees. Table 3-10 shows the regression weights, standardized betas, and significance of all the independent variables. Thirty-three industry dummy variables were also included in the regression but are not reported in the table. Twenty-nine of the thirty-three dummy variables were significant ($p<.01$) predictors of the percentage of bonus eligible employees.

The dummy variable representing owner-managed firms was a significant ($p<.05$) predictor of percent of employees eligible for bonus, while the variable representing owner-controlled firms was not. This suggests that owner-managed firms have significantly greater percentages of bonus eligible employees than owner-controlled or manager-controlled firms. Thus, hypothesis 6b was supported while 6a was not.

TABLE 3-11
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODEL TESTING HYPOTHESIS SEVEN

Variables	Percentage of Managers Eligible for Long-Term Incentives (N=303)	
	Regression Weights	Standardized Betas
Size	0.021	(0.06)
Performance	0.036	(0.11)
Owner-Controlled	-0.107**	(-0.18)
Owner-Managed	-0.225**	(-0.25)
R^2	0.20**	
Adjusted R^2	0.09**	

Note: * $p<.05$
** $p<.01$

Hypothesis Seven

Hypothesis seven proposed that owner-controlled and owner-managed firms will used a greater percentage of long-term incentives than MC firms. Table 3-11 shows the regression weights, standardized betas, and significance of all the independent variables. Dummy variables representing OM and OC firms were significant ($p<.01$) predictors of percentage of managers sampled who were eligible for long-term incentives, but opposite of the direction hypothesized. Owner-managed and owner-controlled firms have a significantly smaller percentage of managers eligible for long-term incentives than manager-controlled firms.

TABLE 3-12
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF THE MODEL TESTING HYPOTHESIS EIGHT

Variables	Percentage of Bonus Pay to Total Pay for Managers (N=306)	
	Regression Weights	Standardized Betas
Size	0.016*	(0.15)
Performance	0.030**	(0.31)
Owner-Controlled	-0.029*	(-0.16)
Owner-Managed	-0.056**	(-0.21)
R^2	0.30**	
Adjusted R^2	0.21**	

Note: * $p<.05$
** $p<.01$

Hypothesis Eight

Hypothesis eight proposed that the bonus to total pay ratio would be larger in OC and OM firms than in MC firms. Table 3-12 shows the regression weights, standardized betas, and significance of all the independent variables. Both dummy variables representing owner-controlled and owner-managed firms are significant predictors of the bonus to total pay ratio. Additionally, size, performance, and one of the thirty-three industry dummy variables were significant predictors of average bonus to total pay ratio. As with hypothesis seven, the effects of ownership were not in the expected direction. Owner-controlled firms and owner-managed firms have a significantly lower percentage of bonus to total pay than manager-controlled firms.

Hypothesis Nine

The sample used to test hypothesis nine was limited to firms who participated in the survey at least two consecutive years. Firms not participating at least two consecutive years were dropped from the sample because change variables could not be calculated. Furthermore, firms were included in the sample only if they were in an industry that contained three or more firms in the sample after separating the data by ownership. Each model was run including industry dummy variables. The owner-controlled sample included firms from fifteen industries. The manager-controlled sample included firms from ten industries. Analysis was not possible for owner-managed firms because the sample size was too small to provide meaningful results (n=11).

Because no industry dummy variables were significant ($p<.05$) and each adjusted R^2 squared was reduced with the inclusion of the industry controls for both the owner-controlled and manager-controlled samples, the models were run without the industry controls. Table 3-13 shows the regression weights, standardized betas, and significance of the variables predicting changes in total pay for owner-controlled and owner-managed firms. Changes in mean number of employees supervised, mean level, and mean education were significantly related to change in total pay in owner-controlled firms. The only significant control variable

TABLE 3-13
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE OF MODELS TESTING HYPOTHESIS NINE

	CHANGE IN TOTAL PAY			
	Owner-Controlled (N=73)		Manager-Controlled (N=56)	
Variables	Regression Weights	Std. Beta	Regression Weights	Std. Beta
Change in Mean Level	-0.54**	-0.29	-0.31	-0.25
Change in Mean Education	0.99*	0.08	-1.46	-0.30
Change in Mean Experience	-0.18	-0.06	-0.16	-0.09
Change in Mean # of Emps Supd	0.32**	0.84	0.29**	0.65
Change in Size	-0.01	-0.03	-0.02	-0.17
Size	-0.02	-0.03	0.00	0.00
Change in Performance	0.03**	0.10	0.01	0.20
Performance	0.014*	0.08	0.003	0.05
R^2	0.93**		0.35**	
Adjusted R^2	0.92**		0.24**	

Note: * $p<.05$
** $p<.01$

related to change in total pay in manager-controlled firms was change in mean number of employees supervised.

Change in performance and absolute performance were both significant predictors of change in total pay for owner-controlled firms. Neither change in performance nor absolute performance was a significant predictor of change in total pay for manager-controlled firms.

To investigate the cascading effects of incentive alignment we ran the identical model of total pay by organizational level for levels one through six. The model was not applied to lower levels because of the reduced sample size at lower levels. Change in mean number of employees supervised was not included in the model for level one because it is equivalent to change in total number of employees, a factor used in the composite change in size measure. Table 3-14 reports the regression weights, standardized betas and significance of the model at each of the six levels for owner-controlled firms. Change in total pay is only significantly related to change in performance for level three and above. Table 3-15 reports the regression weights, standardized betas and significance of the model at each of the six levels for manager-controlled firms. Change in performance is not significantly related to change in pay at any of the six levels. Thus, hypothesis ten was supported.

Summary

As hypothesized, manager-controlled firms were found to have higher managerial pay levels than owner-controlled and owner-managed firms, suggesting that managers in MC firms are able to maximize their total pay. Additionally, changes in managerial pay were only related to financial performance measures in owner-controlled firms, providing evidence that

TABLE 3-14
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE
OF MODELS OF CHANGE IN TOTAL PAY BY
ORGANIZATIONAL LEVEL IN OWNER-CONTROLLED FIRMS

	CHANGE IN TOTAL PAY BY LEVEL					
	Level 1 (N=72)	Level 2 (N=72)	Level 3 (N=73)	Level 4 (N=69)	Level 5 (N=64)	Level 6 (N=48)
Variables	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)
Δ Mean Education	-1.20 (-0.34)	1.92** (0.39)	2.11** (0.49)	-0.87 (-0.26)	0.98* (0.30)	0.46* (0.35)
Δ Mean Experience	-0.02 (-0.02)	0.04 (0.02)	0.31 (0.24)	-0.15 (-0.22)	0.36** (0.53)	0.21** (0.49)
Δ Mean # of Employees Supervised		0.00** (0.37)	0.01 (0.15)	0.01 (0.21)	0.00 (-0.15)	0.00 (0.05)
Δ Size	0.00 (0.01)	0.00 (0.00)	0.01 (0.11)	0.01 (0.08)	0.03* (0.28)	0.01 (0.11)
Size	-0.07 (-0.17)	-0.05 (-.14)	0.00 (0.01)	-0.03 (-.12)	-0.02 (-0.08)	0.00 (0.02)
Δ Performance	0.05* (0.28)	0.04* (0.23)	0.04** (0.31)	0.03 (0.26)	0.01 (0.09)	-0.02 (-0.20)
Performance	0.03 (0.23)	0.03* (0.24)	0.01 (0.17)	0.02* (0.30)	-0.01 (-0.09)	0.01 (0.15)
R^2	0.19*	0.32**	0.29**	.19	.22*	.34**
Adjusted R^2	0.12*	0.25**	0.22**	.09	.13*	.23**

Note: * $p<.05$
** $p<.01$

the pay advantage for managers of MC firms is subject to minimal risk. We also found that manager-controlled firms had a greater percentage of managers eligible for long-term incentives, and a greater bonus to total pay ratio, providing evidence that the MC managerial pay advantage is achieved through bonuses. No relationship between ownership structure and pay structure was found.

TABLE 3-15
REGRESSION WEIGHTS, STANDARDIZED BETAS AND SIGNIFICANCE
OF MODELS OF CHANGE IN TOTAL PAY BY
ORGANIZATIONAL LEVEL IN MANAGER-CONTROLLED FIRMS

	CHANGE IN TOTAL PAY BY LEVEL					
	Level 1 (N=56)	Level 2 (N=56)	Level 3 (N=56)	Level 4 (N=55)	Level 5 (N=50)	Level 6 (N=42)
Variables	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)	Weights (S.B.)
Δ Mean Education	-0.40 (-0.15)	0.63 (0.10)	1.29 (0.21)	-1.16* (-0.30)	-0.41 (-0.08)	0.76 (0.25)
Δ Mean Experience	-0.02 (-0.15)	0.66** (0.43)	0.31 (0.22)	0.17 (0.22)	0.35 (0.19)	0.43** (0.48)
Δ Mean # of Employees Supervised		0.01 (0.09)	0.10** (0.38)	0.00 (0.18)	0.04 (0.20)	0.03** (0.49)
Δ Size	-0.01 (-0.07)	0.06 (0.26)	0.01 (0.06)	0.06** (0.39)	0.03 (0.19)	-0.02 (-.11)
Size	0.00 (-0.05)	0.00 (-.04)	-0.02 (-.21)	-0.02 (-.21)	-0.01 (-0.08)	-0.01 (-.08)
Δ Performance	0.02 (0.21)	0.03 (0.24)	0.02 (0.17)	0.02 (0.21)	0.02 (0.16)	-0.01 (-0.12)
Performance	0.00 (0.06)	0.01 (0.06)	-0.01 (-.13)	-0.03** (-0.33)	0.00 (0.00)	0.01 (0.06)
R^2	0.08	0.25*	0.33**	.39**	.17	.47**
Adjusted R^2	0.00	0.14*	0.23**	.30**	.03	.36**

Note: * p<.05
** p<.01

In the next chapter we discuss the findings and their implications for organizations, agency theory and managerialism. We also provide directions for future research and consider the constraints of the sample.

CHAPTER 4
DISCUSSION AND IMPLICATIONS

This study has extended agency theory and managerial theory to lower levels of the organization with the concepts of cascading incentive alignment and pseudo-principals. The results show how the compensation system may be designed to benefit the managers rather than the owners of a firm, under conditions of high managerial control.

Discussion

The results of the hypotheses tests provide a number of interesting findings about the compensation differences among owner-controlled, owner-managed, and manager-controlled firms with respect to the three compensation decision areas of pay levels, pay structure, and individual differences in pay. They confirm previous studies and theoretical work which show that pay level is related to education, experience, level of responsibility, firm performance, industry, and position in the hierarchy (e.g., Fisher and Govindarajan, 1992; Gerhart and Milkovich, 1990; Becker, 1964; Milkovich and Newman, 1993; Fay, 1989). In this study these factors were used as control variables.

Here ownership structure is the independent variable of interest.

Pay Level

The findings show that pay levels differ as a function of the ownership structure. These findings are consistent with agency theory and managerialism and provide further evidence that MC managers maximize their own wealth at the expense of the owners. The differences in the base pay levels of managers in owner-managed and manager-controlled firms were not significant. However, the base pay differences approached significance ($p<.06$) for owner-controlled and manager-controlled firms.

Furthermore, the results show that owner-controlled and owner-managed firms pay their managers significantly less total pay than manager-controlled firms. The total pay advantage of managers in MC firms exists down through the sixth level of management. This total pay level difference decreases at lower organizational levels. For example, at the first level, CEOs earned over $219,000 more total pay in manager-controlled firms than in owner-managed firms, but at the sixth level, managers earned over $9,000 more total pay. Thus, managers in MC firms receive greater pay than OC or OM managers throughout the organization.

The total pay of managers in MC firms was on average $13,095 more than in OC firms. The base pay of managers in

MC firms was $6,431 more in OC firms. Thus, more than 50% of the total pay difference between MC and OC firms is from bonuses. Although the financial performance of manager-controlled firms is much lower than owner-managed firms, and not significantly better than owner-controlled firms (see table 3-7), MC managers receive greater bonuses. These bonuses represent excessive rents extracted by managers in MC firms.

One possible explanation for the magnitude of these bonus differences is that managers cannot change the level of base pay as easily, as put in place by the compensation consulting firm. It is much simpler to vary bonus levels. Consulting firms set base pay using systematic processes such as job evaluations and market surveys, while bonus determination, however, is much more discretionary and under the control of managers.

These pay differences provide a basis for estimating the agency costs of excessive managerial pay. Managers in MC organizations earned on average 8.2% more than managers in OC organizations and 9.5% more than managers in OM organizations. These "agency costs" represent a substantial amount of money for the average organization. For example, the average firm in this study, with 8,000 managers, if manager-controlled would pay 104.76 million dollars more than an owner-controlled firm and 120.35 million dollars more than an owner-managed firm per year.

Pay Structure

Pay structure was assessed by the Gini coefficient, the CEO to manager pay ratio, number of organizational levels, and average pay between organizational levels. We found no relationship between pay inequality and firm performance, nor any significant differences in the pay structures of owner-controlled, owner-managed, and manager-controlled firms.

The lack of a relationship between firm performance and pay inequality may be due to two reasons. First, there may be no actual relationship between performance and inequality. Although the concept of inequality is useful in characterizing pay structures, it may be related to individual outcomes such as satisfaction or organizational commitment, rather than firm outcomes such as performance. Perhaps the current theoretical construction of the relationship between inequality and firm level measures is deficient. It is possible that across the firm, inequality is a zero-sum game, i.e., increasing the inequality for one person decreases the inequality for another. For example, if all managers at the third level were given raises, perceived inequality for fourth level managers may increase, but perceived inequality for third level managers may decrease. In this case, although individual perceptions of inequity are changed, the perceptions of inequity across the firm remain relatively unchanged.

A second possibility is that the construct of inequality is not assessed well by the measures. The different measures of inequality are influenced by different aspects of the pay structure. For example, the Gini coefficient is heavily influenced by the pay difference between the two lowest levels in an organization, since the Gini assesses the pay differences between all employees and most employees are at these levels. The ratio of CEO pay to manager pay is heavily influenced by the CEOs pay level. Other measures of pay inequality, such as the Herfindahl-Hirschman index, the Rosenbluth index, or the Theil-Bernoilli index might be useful predictors and are worth investigation (Rabin, 1987).

Pay structure did not vary by type of control. There are several explanations for this. First, the pay structure measures may be inadequate. Second, compensation consulting firms may impose a pay structure upon their clients. Since all firms in this sample were clients of the same compensation consulting firm, it may be that the firm designed all structures with the same processes, resulting in little pay structure variance between organizations. Thus, a sample not constrained by the compensation consulting firm effect, i.e., more representative of the total population of organizations, might reveal the proposed relationship.

Third, structure height and inequality are largely derived from firm size. According to managerial theory, executives in MC firms prefer to maximize size. It may well be that increasing firm size may be the primary mechanism used by MC managers to pursue their interests, rather than secondary or derived characteristics such as structure height or pay equality.

Lastly, the span of control estimations used to calculate the Gini coefficient may be deficient. Perhaps using actual span of control measures rather than estimations will allow future researchers to achieve the hypothesized results.

Individual Differences in Pay

There is a much stronger effect of financial performance on pay increase decisions in OC firms. Changes in total pay were related to firm performance and changes in firm performance in OC firms at the top three levels. Because both firm performance and changes in firm performance are related to changes in pay, it appears that owners desire not only improvements in performance but some acceptable level of firm performance. We also found that owner-managed firms had a significantly greater percentage of employees eligible for bonuses, while manager-controlled firms had a significantly greater percentage of managers eligible for long-term incentives and greater bonus to total

pay ratios. Total pay was not affected by firm performance differently by ownership.

There are a number of explanations of why performance and changes in performance are related to changes in pay, rather than absolute pay in OC firms. First, while consulting firms may strongly influence base pay structures, they do not exert as much influence in determining changes in pay, giving managers in OC firms greater opportunity to shift their performance risk during determinations of pay changes.

Second, the relationship between firm performance and absolute pay may simply reflect ability to pay. The relationship between changes in pay and changes in performance seems to reflect risk-shifting. The notion of risk-shifting is dynamic, implying potential gains or losses (as shown by pay changes) in response to performance variability. The fact that pay changes are more sensitive to performance changes in OC firms than in MC firms, while there is no difference in the absolute pay to performance relationship between the two is consistent with the risk-shifting construct in the agency literature. The findings are virtually identical to those of Gomez-Mejia, Tosi, and Hinkin's (1987) with CEO pay.

We did not find that OC firms have a greater percentage of employees eligible for bonuses than MC firms, as hypothesized. It is possible that the hypothesized

relationship was not found because of the large number of possible ways in which bonuses may be calculated. It may well be that archival data on bonuses is just too rough to model underlying differences in risk. Risk differences may exist by ownership type, but unless researchers know how the plans are designed these differences may not be detectable by simply looking at eligibility and percentages.

Not only do managers in MC firms in our sample take rents through bonuses, but also through long-term incentives. Perhaps the influence of the compensation consulting firm requires managers to increase their pay level through bonuses rather than base pay. Although agency theory suggests that managers would prefer not to accept risk through incentives, it appears they may be quite willing to accept incentives when they are a means of achieving pay premiums without downside risks.

These findings are consistent with other studies (e.g., Gomez-Mejia, Tosi, and Hinkin, 1987; McEachern, 1975) which have shown that CEOs in manager-controlled firms have the best of both worlds, having competitive base salaries, which minimizes their downside risk, while receiving large bonuses when the firms perform well. Our findings suggest that similarly, lower level managers of manager-controlled firms, receive higher base salaries, and receive substantial bonuses although firm performance is no better than owner-controlled or owner-managed firms.

Implications

These findings have a number of implications for scholars and practitioners. We detail their implications for organizations, and for agency theory and managerialism.

Implications for Organizations

We have estimated the agency costs of excessive managerial pay when managers are in control to be approximately 8% of total managerial pay. It is likely that this estimate is not an upper limit since organizations may incur other residual losses, as well as monitoring and bonding costs that increase the total agency costs. For example, a greater percentage of managers receive long-term incentives in MC firms than in OC or OM firms. These incentives, such as stock options, are not included in the compensation data, and may well substantially add to the residual loss figures.

The use of a compensation consulting firm appears not to restrict the capacity of managers in MC firms to increase their pay. Managers appear to use bonuses and incentives to extract rents from the organization. Since managers in MC firms receive more total pay, yet MC firms do not perform significantly better than OC or OM firms, perhaps manager-controlled firms achieve greater bonus levels by setting lower bonus goals for managers. This suggests that greater control must be exercised during compensation strategy

formulation and pay system design, specifically when determining the nature of bonuses. Greater control by owners when determining bonus goals may significantly reduce the pay differences between owner-controlled and owner-managed firms. One method to achieve greater control may be to have independent agents rather than the firm's management select board members, diminishing the influence of management (Tosi, Gomez-Mejia, and Moody, 1991).

Although compensation consultants may create the appearance of rationality, it does not necessarily follow that the resulting compensation strategy maximizes owner returns. Managers may still use the system to benefit themselves (Tosi and Gomez-Mejia, 1989). Although we found no differences in the pay structures of owner-controlled and owner-managed firms, significant differences were found in how those systems were used. Thus, it is the use of the system, rather than the system itself, that leads to excessive managerial pay.

Implications for Agency Theory and Managerialism

There are a number of ramifications for agency theory and managerial theory. First, the results provide an initial empirical estimate of agency costs for manager-controlled organizations. Agency costs are generally modelled mathematically (e.g., Jensen and Meckling, 1976). Our results produce an initial empirical estimate of the

residual losses due to excessive managerial pay, providing a lower bound estimate of total agency costs. The magnitude of this figure suggests that agency costs are indeed substantial.

Second, It is quite important to control agency problems at the top of the organization since incentive alignment does cascade down the organization. Changes in pay are related to changes in performance at the top three levels of OC firms. This relationship does not exist in MC firms at any level. Since it appears that control loss is cumulative, strong incentive alignment at the top may diminish agency problems at lower levels.

Third, the findings support the use of the 5% cutoff distinguishing owner-controlled, owner-managed, and manager-controlled firms. In comparing the conventional 5% measure with our refined 5% measure, we found that the refined measure showed greater distinctions between manager-controlled and owner-controlled firms in all cases. Thus, future researchers may find it beneficial to incorporate voting rights, disclaimers of beneficial ownership, and ownership by employee benefit plans when determining owner structure.

Fourth, it may be useful to integrate process considerations into agency theory. Since managers extract rents through the processes, they should be integral elements of future empirical research. For example, a

greater understanding of how compensation strategy is formulated, bonuses are determined, and compensation committee members are appointed may increase our knowledge of how managers in MC firms extract their rents and how owners may reduce agency costs. This calls for research which goes beyond the standard methods using archival data, since such data can only allow inferences about the processes through which the agency costs are incurred.

Directions for Future Research

There are a number of other issues to be addressed by future research in compensation strategy. First, future compensation strategy research should address differences in ownership structure, since it significantly affects pay level decisions. The results show that ownership structure is a determinant of pay level as low as the sixth level of management. How ownership structure affects pay levels for non-management positions is a viable area of study.

Second, the determinants of bonuses may be a fruitful area of inquiry. It is not enough to know the percentage of bonus to total pay in assessing risk. The goals needed to receive bonuses may greatly affect the compensation and risk positions of employees. Perhaps, a measure of goal difficulty may help assess the perceived risk inherent in managerial pay.

Third, other dimensions of compensation may be affected

by ownership structure. For example, are benefit levels higher in manager-controlled firms since benefits are a relatively risk-free form of compensation? This would require refinements in costing benefits and long-term incentives to allow researchers to more accurately measure these areas.

Lastly, agency theory and managerialism may be related to other aspects of compensation strategy such as using skill-based pay rather than job-based pay or centralized rather than decentralized compensation administration. For example, since agency theory suggests that increased decision making of non-owners leads to agency problems (Jensen and Meckling, 1976), owner-controlled firms are less likely to have decentralized compensation administration than manager-controlled firms. Owners will find that broad dispersion of compensation decision-making rights is highly inefficient since shareholders must incur greater monitoring costs.

Sample Constraints

The data used to test the hypotheses have some distinct advantages over the archival data generally used in compensation research. First, it is a large data set incorporating over 800 organizations and over 200,000 individual managers over eight years, providing compensation measures for lower level managers in each firm. Second, the

large number of individual, job, and organizational variables contained in the data set permits testing of the hypotheses while controlling for numerous factors previously shown to influence compensation. Third, the large range of firms in the sample allow generalizations across industries and smaller firms. Lastly, it is reasonable to expect a high level of accuracy in this surveyed data, because respondents had hired the compensation firm to conduct the survey, rather than being solicited for the data.

The data do have some limitations that must be recognized. First, the sample which comprises the CAHRS data set is not random, since the organizations are limited to those using a compensation consulting firm.

Second, the consulting firm imposes numerous compensation practices on the organizations. The systematic processes such as job evaluations and industry surveys used by compensation consulting firms may limit the variance in compensation strategies used by the participating companies. This may reduce the variance in pay and make detection of differences more difficult.

Third, the data do not contain the actual values of benefits or long-term incentives such as stock options. Although simple measures of cash compensation have served as an excellent proxy for total pay (Finkelstein and Hambrick, 1989; Agarwal, 1981), measures of benefits and long-term incentives would provide a more complete understanding of

differences in compensation between OC and MC firms.

Lastly, the data do not provide any information about how bonuses are actually determined. Information on the specific level of performance required to obtain bonuses would provide greater understanding of actual risk levels.

Summary

Managers in manager-controlled firms are paid significantly more than managers in owner-controlled or owner-managed firms. Changes in pay were significantly related to changes in performance in owner-controlled firms, but not in manager-controlled firms, suggesting that the pay level advantages for managers in MC firms are subject to minimal risk. The change in pay to change in performance relationship in owner-controlled firms was shown only at the top three levels, providing evidence that incentive alignment does cascade downward. Lastly, managers use bonuses and long-term incentives to achieve greater pay premiums, possibly because of the constraints of a compensation consulting firm.

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APPENDIX A
FACTOR ANALYSES USED TO CREATE COMPOSITE VARIABLES

Size Composite Variable

	Factor 1	Factor 2	Factor 3
Eigenvalue	2.51	0.40	0.10
Proportion of Variance	0.84	0.13	0.03
Cumulative Proportion	0.84	0.97	1.00
Assets Factor Weight	0.96	-0.16	-0.23
Sales Factor Weight	0.93	-0.31	0.20
Number of Employees Factor Weight	0.85	0.52	0.04

ΔSize Composite Variable

	Factor 1	Factor 2	Factor 3
Eigenvalue	1.82	0.61	0.57
Proportion of Variance	0.61	0.20	0.19
Cumulative Proportion	0.61	0.81	1.00
ΔAssets Factor Weight	0.76	0.64	0.04
ΔSales Factor Weight	0.79	-0.35	0.51
ΔNumber of Employees Factor Weight	0.79	-0.28	-0.55

APPENDIX B
INDUSTRIES REPRESENTED IN THE SAMPLE

1. Apparel and other textile products
2. Building materials and garden supplies
3. Business services
4. Chemicals and allied products
5. Communications
6. Electric, gas, and sanitary services
7. Electronic and other electric equipment
8. Fabricated metal products
9. Food and kindred products
10. Furniture and fixtures
11. Holding and other investment offices
12. Industrial machinery and equipment
13. Instruments and related products
14. Insurance carriers
15. Leather and leather products
16. Miscellaneous manufacturing industries
17. Oil and gas extraction
18. Paper and allied products
19. Petroleum and coal products
20. Primary metal industries
21. Printing and publishing
22. Railroad transportation
23. Real estate
24. Rubber and miscellaneous plastics products
25. Textile mill products
26. Stone, clay, and glass products
27. Tobacco products
28. Transportation by air
29. Transportation equipment
30. Transportation services
31. Trucking and Warehousing
32. Water transportation
33. Wholesale trade-durable goods
34. Wholesale trade-nondurable goods

APPENDIX C
CORRELATION MATRIX OF ALL VARIABLES

	Mean Base Pay (thou-sands)	Mean Total Pay (thou-sands)	Mean Years Educa-tion	Mean Level of Manager	Number of Levels	Mean Years Exper-ience	Mean # of Emps. Super-vised
Mean	125.9	158.6	16.5	3.9	6.1	21.4	1378
St. Dev.	44.4	67.7	0.59	0.71	1.5	4.34	2124
Mean Base Pay	1.00						
Mean Total Pay	0.96**	1.00					
Mean Education	0.56**	0.51**	1.00				
Mean Level	-0.28**	-0.26**	-0.23**	1.00			
Number of Levels	-0.20**	-0.19**	-0.19**	0.87**	1.00		
Mean Experience	0.39**	0.40**	-0.01	0.12*	0.22**	1.00	
Mean Emps. Supd.	0.70**	0.74**	0.25**	-0.06	0.02	0.40**	1.00
Number of Emps.	0.46**	0.47**	0.23**	0.21**	0.23**	0.32**	0.78**
Size	0.50**	0.49**	0.23**	0.25**	0.30**	0.41**	0.67**
Performance	0.08	0.17**	0.05	0.01	0.01	0.02	0.09
Gini, Base Pay	0.30**	0.28**	0.27**	-0.67**	-0.66**	-0.01	0.13*
Gini, Total Pay	0.28**	0.30**	0.27**	-0.64**	-0.64**	0.00	0.12*
Level Dif., Base	0.26**	0.25**	0.20**	-0.60**	-0.60**	-0.15*	0.08
Level Dif., Total	0.26**	0.31**	0.22**	-0.53**	-0.54**	-0.14*	0.12*

	Mean Base Pay	Mean Total Pay	Mean Years Educa-tion	Mean Level of Manager	Number of Levels	Mean Years Exper-ience	Mean # of Emps. Super-vised
CEO/Avg Mngr,Base	-0.18**	-0.17**	-0.18**	0.61**	0.57**	0.01	-0.05
CEO/Avg Mngr,Totl	-0.15**	-0.10	-0.15*	0.61**	0.56**	0.03	-0.02
Bonus/Total Ratio	0.41**	0.63**	0.25**	-0.06	-0.06	0.26**	0.44**
% Bonus Eligible	-0.10	-0.10	0.06	-0.01	-0.02	-0.06	-0.08
% LTI Eligible	0.37**	0.39**	0.24**	-0.26**	-0.27**	0.02	0.23**
Owner-Controlled	-0.23**	-0.24**	-0.09	-0.11*	-0.09	-0.13*	-0.27**
Owner-Managed	-0.18**	-0.17**	-0.09	-0.02	-0.07	-0.24**	-0.16**
Manager-Controlled	0.36**	0.37**	0.16**	0.13*	0.15**	0.31**	0.39**
Δ Mean Experience	-0.04	-0.01	-0.08	0.09	0.09	0.19*	0.03
Δ Mean Emps. Sup.	-0.04	-0.03	-0.18*	-0.01	0.01	0.13	-0.02
Δ Mean Level	-0.01	0.01	0.17*	-0.04	-0.07	-0.13	-0.07
Δ Mean Education	0.05	0.08	-0.13	0.06	0.03	0.11	0.12
Δ Size	-0.04	0.02	-0.07	0.02	0.04	-0.01	0.01
Δ Performance	-0.08	-0.07	-0.04	0.00	-0.02	-0.08	-0.05
Δ Base Pay	0.06	0.03	-0.18*	-0.07	-0.03	0.13	0.01
Δ Total Pay	0.10	0.06	-0.18*	-0.08	-0.04	0.12	0.04

	Number of Emps.	Size	Perform-ance	Gini of Base Pay	Gini of Total Pay	Mean Diff. Between Levels, Base Pay	Mean Diff. Between Levels, Total
Mean	28364	0	0	0.028	0.035	1.54	1.63
St. Dev.	47247	0.84	0.96	0.023	0.027	0.16	0.19
Number of Emps.	1.00						
Size	0.85**	1.00					
Performance	0.08	0.08	1.00				
Gini, Base Pay	-0.05	-0.06	0.05	1.00			
Gini, Total Pay	-0.06	-0.07	0.08	0.97**	1.00		
Level Dif., Base	0.02	-0.04	-0.04	0.60**	0.58**	1.00	
Level Dif., Total	0.07	0.01	0.07	0.54**	0.57**	0.91**	1.00
CEO/Avg Mngr,Base	0.21**	0.19**	-0.08	-0.43**	-0.42**	0.08	0.08
CEO/Avg Mngr,Total	0.24**	0.23**	0.05	-0.42**	-0.39**	0.01	0.16**
Bonus/Total Ratio	0.31**	0.25**	0.33**	0.10	0.20**	0.12*	0.34**
% Bonus Eligible	-0.12*	-0.10	-0.04	-0.09	-0.09	-0.19**	-0.18**
% LTI Eligible	0.15**	0.10	0.12*	0.15*	0.19**	0.16**	0.21**

	Number of Emps.	Size	Perform-ance	Gini of Base Pay	Gini of Total Pay	Mean Diff. Between Levels, Base Pay	Mean Diff. Between Levels, Total
Owner-Controlled	-0.29**	-0.29**	-0.11	0.07	0.08	0.04	0.06
Owner-Managed	-0.16**	-0.15**	0.17**	0.02	0.01	-0.10	-0.10
Manager-Controlled	0.41**	0.40**	-0.01	-0.09	-0.08	0.02	0.01
Δ Mean Experience	0.05	0.06	0.28**	-0.16	-0.08	-0.12	-0.05
Δ Mean Emps. Sup.	-0.02	-0.03	0.17*	-0.06	-0.07	0.04	0.07
Δ Mean Level	-0.14	-0.13	-0.08	0.11	0.12	-0.01	-0.01
Δ Mean Education	0.10	0.08	-0.08	0.06	0.02	-0.04	-0.04
Δ Size	0.00	-0.03	0.22**	-0.03	0.03	-0.12	0.03
Δ Performance	-0.05	-0.04	-0.10	0.07	0.05	0.10	0.09
Δ Base Pay	0.00	-0.03	0.20**	-0.07	-0.07	0.08	0.11
Δ Total Pay	0.00	-0.03	0.19*	-0.04	-0.07	0.08	0.10

	CEO to Avg. Manager Base Pay	CEO to Avg. Manager Total Pay	Bonus to Total Ratio	% of Emps. Bonus Eligible	% of Mngrs. Long-term Incentive Eligible
Mean	4.03	4.72	0.182	0.046	0.701
St. Dev.	1.11	1.56	0.091	0.105	0.302
CEO/Avg Mngr,Total	0.91**	1.00			
Bonus/Total Ratio	0.00	0.18**	1.00		
% Bonus Eligible	-0.16**	-0.15**	-0.04	1.00	
% LTI Eligible	-0.18**	-0.13*	0.32**	-0.15**	1.00
Owner-Controlled	-0.05	-0.03	-0.14**	0.02	-0.08
Owner-Managed	-0.15**	-0.14**	-0.11	0.16**	-0.14*
Manager-Controlled	0.16**	0.13*	0.22**	-0.14*	0.18**
Δ Mean Experience	0.01	0.02	-0.01	-0.02	0.05
Δ Mean Emps. Sup.	-0.01	0.02	0.00	-0.02	0.06
Δ Mean Level	-0.11	-0.10	0.06	0.05	0.05
Δ Mean Education	0.03	0.03	0.15	0.06	0.01
Δ Size	-0.06	0.06	0.17*	-0.03	0.01
Δ Performance	0.06	0.04	-0.02	0.01	-0.10
Δ Base Pay	0.02	0.03	-0.02	-0.04	0.08
Δ Total Pay	-0.01	0.00	-0.02	-0.03	0.07

	Owner-Controlled	Owner-Managed	Manager-Controlled	Change in Mean Experience	Change in mean # of Employees Supervised
Mean	0.502	0.134	0.365	-0.039	0.016
St. Dev.	0.501	0.341	0.482	0.048	0.353
Owner-Controlled	1.00				
Owner-Managed	-0.39**	1.00			
Manager-Controlled	-0.76**	-0.30**	1.00		
Δ Mean Experience	-0.03	----	0.03	1.00	
Δ Mean Emps. Sup.	0.02	----	-0.02	0.52**	1.00
Δ Mean Level	0.13	----	-0.13	-0.38**	-0.38**
Δ Mean Education	0.05	----	-0.05	-0.39**	-0.24**
Δ Size	0.00	----	0.00	0.06	0.12
Δ Performance	0.06	----	-0.06	0.05	-0.08
Δ Base Pay	-0.04	----	0.04	0.56**	0.87**
Δ Total Pay	-0.04	----	0.04	0.50**	0.82**

	Change in Mean Level	Change in Mean Education	Change in Size	Change in Performance	Change in Base Pay	Change in Total Pay
Mean	0.012	0.002	0.000	0.000	0.023	0.037
St. Dev.	0.092	0.013	0.61	0.96	0.117	0.147
Δ Mean Level	1.00					
Δ Mean Education	0.00	1.00				
Δ Size	0.15	-0.10	1.00			
Δ Performance	0.03	0.09	-0.29	1.00		
Δ Base Pay	-0.63**	-0.17	0.04	-0.05	1.00	
Δ Total Pay	-0.60**	-0.14	0.00	0.06	0.96**	1.00

Note: * p<.05
** p<.01
Sample size (n) ranges from 272 to 307 for correlations without change variables.
Sample size (n) ranges from 129 to 156 for correlations with change variables.

BIOGRAPHICAL SKETCH

Steve Werner received his Bachelor of Arts degree in mathematics and computer science in 1985 from San Jose State University, CA, followed by a Master of Business Administration degree in 1986. He worked as a production control planner for National Semiconductor, Inc. in Santa Clara, CA, until the fall of 1989. He has taught courses in compensation, organization theory, human resources, and international management at the University of Florida. Upon completing his doctoral degree, Steve will join the faculty of the Department of Management at the University of Houston, TX.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Henry L. Tosi, Chair
McGriff Professor of Management

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Department of Management in the College of Business Administration and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August 1993

Dean, Graduate School